BULLETIN
No. 28

THE RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY

BULLETIN No. 28

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6 Orkney Road, Brookline, Mass.

EDWARD HUNGERFORD, *Vice President*
230 Park Ave., New York, N. Y.

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808 South Orange Ave., Newark, N. J.

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The Railway and Locomotive Historical Society, INC.

WE are again turning to our Canadian neighbors for the majority of material that appears in this BULLETIN. It was felt that the Canadian Railway Centenary and the Golden Jubilee of the Canadian Pacific Railway should be fittingly observed in our publication. Thanks to the activities of our Canadian Committee we are enabled to present to our members what we hope will be material to their liking and interest. As the result of the Centenary a new Society has been born in Canada. It is fitting that two of our own members should hold important offices in this new Society and let us hope that the amicable relations that have existed between this Society and our Canadian members will be extended also towards this new Society.

Within the past forty years, our railroads in the west or mid-west have used, at one time or another, some very interesting types of locomotives that have either influenced the design of locomotives on that road or on other roads in their vicinity. The field is a broad one, yet one that can be discussed briefly but interestedly. In this BULLETIN we are starting such a series. The success of it will depend upon the interest shown by our members. We are fortunate to have Mr. Arthur Curran discuss these different types for us and his remarks will be confined solely to our railroads beyond the confines of the east.

The next group of locomotives that came into the Boston & Maine R. R. were those from the Eastern and its associated lines and those from the Worcester, Nashua & Rochester R. R. We present this group of locomotives in this bulletin and it will be followed by those from the Northern (N. H.) R. R. in our next publication.

For the benefit of our members we wish to advise you that under date of March 1st of this year, our 1932 leaflet was prepared and copies

mailed to all members in good standing. The same applies to our list of members issued under date of March 31st.

BULLETIN #27, a special bulletin, touching on the History of the Galena & Chicago Union R. R. was also prepared and distributed in March. In April a prospectus appeared and any of our members who care to send us the names of any of their friends who might be interested to join this Society, we will gladly mail them a copy of this prospectus or a copy will be sent them for the asking.

The Society is deeply indebted for the work and interest shown by one of our members, Mr. Otto Kuhler. Mr. Kuhler has already given us the benefit of his talents but this is the first bulletin in which his cover design appears. The "Josephine", on the cover, is his design of the same "Josephine" that Mr. Loye has so ably written about. The little emblem is Mr. Kuhler's conception of an insignia for this Society. The editor would be pleased to have the reactions of our members relative to the latter.

The Pennoyer Colored Prints

FOR the benefit of some of our newer members and for our older ones as well, we are again calling attention to the attractive set of four colored prints of early locomotives that this Society has on sale.

The set includes "Snowbound", a Crampton type of locomotive used on the Camden & Amboy R. R. in 1850; the "Pioneer" of the Cumberland Valley, built by Seth Wilmarth in 1851; an American Express train of the '70's drawn by a Rogers locomotive and through the kindness of the Delaware & Hudson Co. we are able to include the "Stourbridge Lion", imported from England in 1829. The "Pioneer" is 7x11 in size, the other three are 8¼x10½.

This spring, in the Anderson Galleries, New York, Mr. A. Sheldon Pennoyer had forty-four (44) canvasses on exhibition. Eight of these portrayed the early days of the iron horse. The work of Mr. Pennoyer attracted no little attention, both by the visitors of the exhibition and the press. His work is spoken of as "impressively effective as correct representations of railway operation in the middle years of the last century. Mr. Pennoyer quite dims the popular glory of the Currier & Ives lithographs of such scenes." The *Arts Weekly* speaks of this exhibit as follows: "A. Sheldon Pennoyer, at the Anderson Galleries, is showing a group of canvases, illustrating the Early Days of the Iron Horse, which reveal how thoroughly he has documented himself in the history of railroads and engines, for he gives remarkable portraits of famous locomotives, which authorities declare are meticulously veracious." Howard Cushman, in a column devoted to the description of these paintings, states—"You don't have to be more than 110 years old to get a hearty wallop out of A. Sheldon Pennoyer's group of early railroading subjects in the exhibition."

We take no little pride in saying that Mr. Pennoyer is a member of this Society and has been instrumental in giving our members the oppor-

tunity of procuring a set of these lithographs at an extremely low price. There are still a few sets left and our members are urged to get them before the supply is exhausted. After these sets have been disposed of, no more can be obtained. You can still procure a set for $5.00 by addressing Chas. E. Fisher, 6 Orkney Road, Brookline, Mass.

Christmas Cards

A GOOD many of our members may wonder at this announcement so early in the year. It is a fact however, that in the past years many of our members have either had a plate with the season's greetings made for them or else have hunted in vain for such cards or, in some cases, they have used some of their own negatives. Last year the attention of the Editor was called to an interesting card handled by one of the local card shops here in Boston. The card was small but very well executed in colors of the "DeWitt Clinton". This card will be used again this year and sells for 5c each.

Three new cards have been added to the 1932 line and they are of an engine similar to that used by Blenkinsop and a coach; and two Currier & Ives reproductions. One of them is the familiar "Snowbound" in several colors and the other is of what appears to be a 4-4-0 Norris locomotive with Bury dome and a train consisting of four cars. The latter is also in several colors. The 1932 additions sell for 10c each, or a larger size can be furnished for 15c each. They are all well executed and are well worth the money. You should order your cards before December 1st from

THE MARJORIE KNAPP BOOK SHOP

110 Mount Vernon Street

Boston, Massachusetts

The Crampton Locomotive

UNDER the above title, one of our members, F. Gaiser has contributed in his essay some very interesting data on the Crampton locomotive. This essay, originally published in 1909 has been revised and has been brought up to date (1931). The essay was also awarded a prize by the Verein Deutscher Eisenbahn—Verwaltungen. For copies of this book, orders should be addressed to:

VERKEHRSZENTRALAMT DER DEUTSCHEN STUDENTENSCHAFT
Technische Hochschule, Darmstadt, Germany.

The price of this essay is 5 marks or $1.20.

In this connection, those of our members who wish to know of a trustworthy firm of dealers of locomotive photographs in Germany may write the above firm for their list of cards. From the samples submitted their post cards are certainly worth their reasonable charge of 7c each or 15 for $1.00.

1832—The Canadian Railway Centenary—1932

By JOHN LOYE

ORIGIN OF THE CHAMPLAIN & ST. LAWRENCE RAILROAD

IN the twenties of the last century, the influx of immigrants, the rapid settlement and growth of Upper Canada and the consequent increase in trade and the business of transportation, made necessary the creation of artificial channels to overcome the barriers placed by nature here and there in Canada's great rivers, especially in the St. Lawrence basin. Thus came into being the several canals that enable craft to ascend the great waterway from Montreal to Lake Ontario.

With the opening of the Lachine Canal in 1821, there arose the question of connecting the St. Lawrence and the Richelieu rivers so as to facilitate passage from Montreal to points on Lake Champlain. Since pioneer days, and even in the days of the Indian, a land route had existed from Laprairie, to a point diagonally across the St. Lawrence and westerly from Montreal, to a point on the Richelieu above the Chambly rapids, St. John, also named Dorchester for a time after the British conquest of Canada. The first proposal was, of course, a canal, because the railroad had not reached a stage of development where it could be seriously considered, if considered at all, in 1821.

THE CHAMPLAIN & ST. LAWRENCE CANAL

Thus came the agitation for the Champlain & St. Lawrence Canal, to follow the route we have just described. Now it is of interest to note, that in spite of the very immature nature of the few existing railroads to be cited as examples, there were several writers to the Quebec papers of that day, that advocated the railroad and urged the Government not to commit itself to such vast undertakings as canals until it could be seen how the railroads would develop in a few years time.

In December of 1824, the Montreal Gazette editorially advised the Legislature of Lower Canada to decide upon a Champlain and St. Lawrence railroad instead of a canal. In this we find the first influential move in support of an enterprise that had only an optimistic prospect of eventual perfection to commend it. The public mind in Canada, as elsewhere, apparently dwelt in the assurance that the railroad would grow to maturity in a short time. And so it proved to be! Before the twenties were out, the greatest mechanical combination of all time, the tubular boiler and the sharpened steam blast, had been tripped over and discovered. The year 1829 saw the perfected locomotive and the resultant practical railroad.

THE DECIDING FACTOR

The result of the Rainhill competition of 1829 was hailed by the railroad advocates in Canada as proof of the soundness of their arguments. It did not convince those who controlled the destiny of Canada's transportation system. The Stockton & Darlington Railway had been under observation since 1825 and appeared unsatisfactory in its operation. The full significance of Rainhill and the "Rocket" was not discerned in Canada.

It remained, however, for the operation of the Liverpool & Manchester Railway to convince the Canadian promoters that the railroad was no longer a carrier of doubtful efficiency. With the formal opening of that famous railway in 1830 and the fast and regular train service in daily operation, it was now conceded by all, that the railroad remained only to be adopted whenever the Canadian promoters decided to take the momentous step. In 1831 a bill was submitted in the Legislature of Lower Canada, to empower the Proprietors of the Champlain & St. Lawrence Railroad to construct a line of railway from the village of Laprairie to the town of St. John, a distance of 14½ miles.

JOHN MOLSON

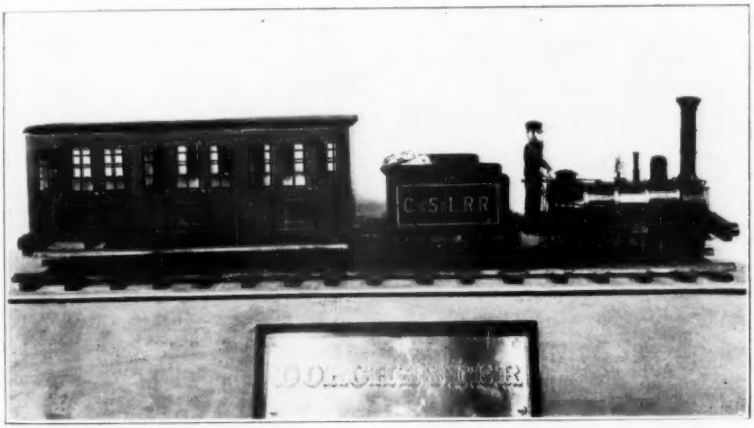
To those versed in Canadian history it seems only natural for the prime mover in Canada's first railway enterprise to be John Molson, father of steam transportation in British North America.

John Molson, the elder, established in Montreal in 1782, was a brewer. His premises were located at a point on the river shore where the great Montreal Harbor Bridge now spans the St. Lawrence. The vast buildings of Molson's Brewery now extend westward from the site of the first establishment.

John Molson prospered. His business flourished. He also promoted other activities. The chief problem in his business was that of transportation, which was very slow and tedious from Quebec to Montreal. Only craft of medium draft could ascend the St. Lawrence in those days, and then only by the grace of favorable winds from the Gulf, the north and east, which were less prevalent in the summer. Consequently, three or four weeks would be taken in sailing up to Montreal. Highway travel was equally slow, and so hampered, Molson was ever looking for a means of accelerating transportation on the river and on the road.

THE STEAMBOAT APPEARS

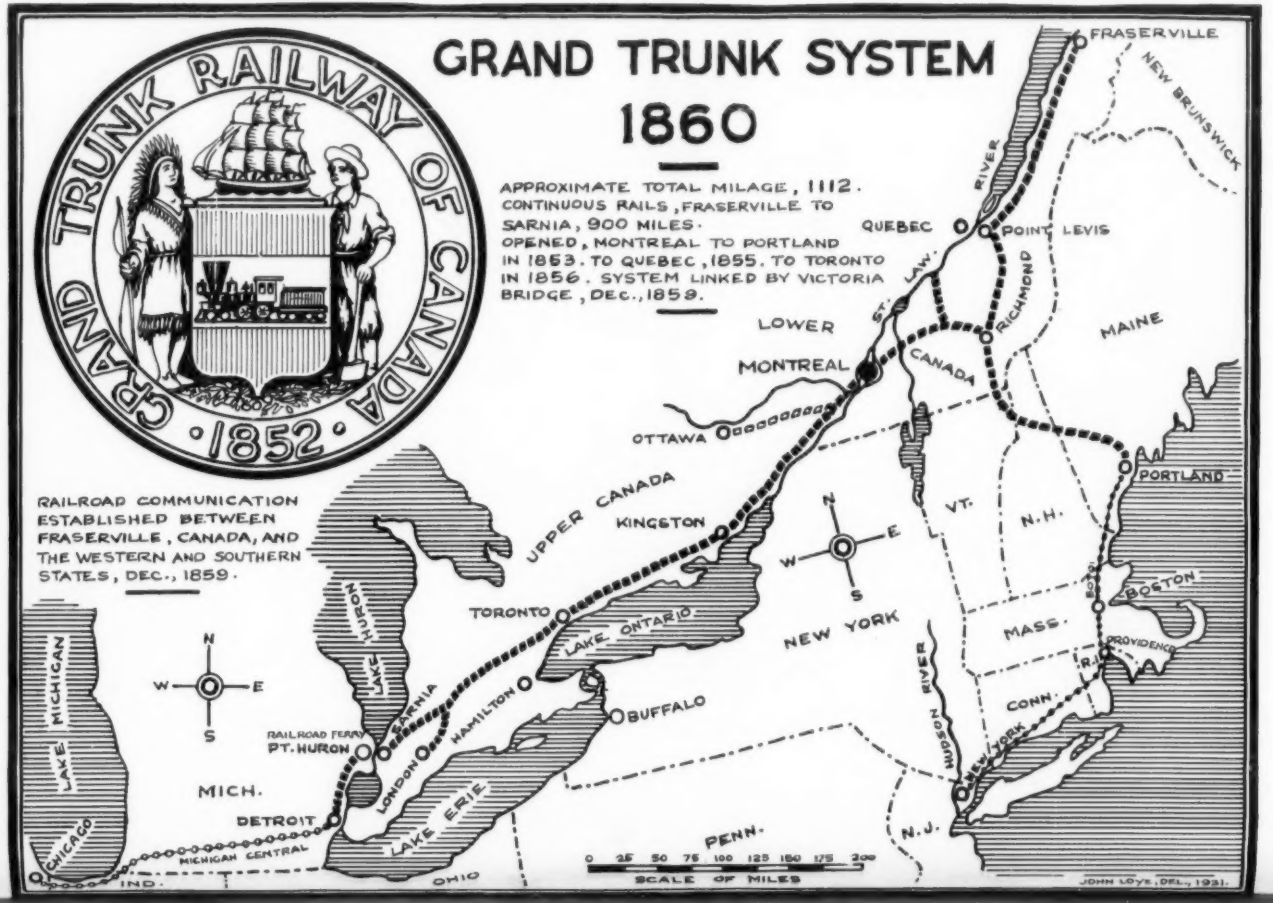
In 1807 great interest was aroused in Canada by the successful achievement of Robert Fulton on the Hudson River with his steamboat, the "Clermont." John Molson was particularly interested. He had a well appointed machine shop, forge and foundry in connection with his yards and warehouses. The idea of building a steamboat now suggested itself. No move was made, however, until closer information was obtainable, and this came in a very tangible way at St. John, during the sum-



FIRST LOCOMOTIVE IN CANADA—1836.

Model of the locomotive "Dorchester" and passenger car, on exhibition in the Chateau de Ramezay Museum, Mo. ٨. '. Below the train is one of the brass name plates of the original engine.

(Photo—Courtesy of the Antiquarian and Numismatic Society of Montreal).


GRAND TRUNK RAILWAY OF CANADA
1852
GRAND TRUNK SYSTEM
1860
APPROXIMATE TOTAL MILAGE, 1112.
CONTINUOUS RAILS, FRASERVILLE TO SARNIA, 900 MILES.
OPENED, MONTREAL TO PORTLAND IN 1853. TO QUEBEC, 1855. TO TORONTO IN 1856. SYSTEM LINKED BY VICTORIA BRIDGE, DEC., 1859.
RAILROAD COMMUNICATION ESTABLISHED BETWEEN FRASERVILLE, CANADA, AND THE WESTERN AND SOUTHERN STATES, DEC., 1859.
FRASERVILLE
NEW BRUNSWICK
RIVER
QUEBEC
POINT LEVIS
ST. LAW.
RICHMOND
MAINE
LOWER CANADA
MONTREAL
OTTAWA
UPPER CANADA
KINGSTON
PORTLAND
VT.
N.H.
BOSTON
MASS.
PROVIDENCE
R.I.
CONN.
NEW YORK
HUDSON RIVER
TORONTO
LAKE ONTARIO
NEW YORK
BUFFALO
HURON
LAKE
SARNIA
HAMILTON
LONDON
LAKE ERIE
RAILROAD FERRY
PT. HURON
MICH.
LAKE MICHIGAN
DETROIT
CHICAGO
MICHIGAN CENTRAL
IND.
OHIO
PENN.
N.J.
N
W
E
S
0 25 50 75 100 125 150 175 200
SCALE OF MILES
JOHN LOYE, DEL., 1931.

mer of 1808, when the steam scow, "Vermont", arrived from Lake Champlain.

John Molson journeyed to St. John to examine the craft. In so doing he met the engineer, Ziba Pangborn, a Vermonter. He induced Pangborn to come to Montreal and work for him. This done, plans were made for the first Canadian steamboat, the "Accommodation", which was built in the Molson yards during the winter of 1808-09 and fitted with engines and machinery during the ensuing summer. In November of 1809, under its own steam, a round trip was made between Montreal and Quebec.

The success of the "Accommodation" encouraged John Molson in a new enterprise—steam transportation on the St. Lawrence. He developed a line of travel via the St. Lawrence River by steamer to Laprairie, thence by stage to St. John and thence by steamer via the Richelieu to Whitehall and other points on Lake Champlain. This route became a popular one for summer travel, but the overland transit between Laprairie and St. John was an impediment to the adequate and easy passage of freight. Thus, it will readily be appreciated where the need of improvement lay and what this should logically be.

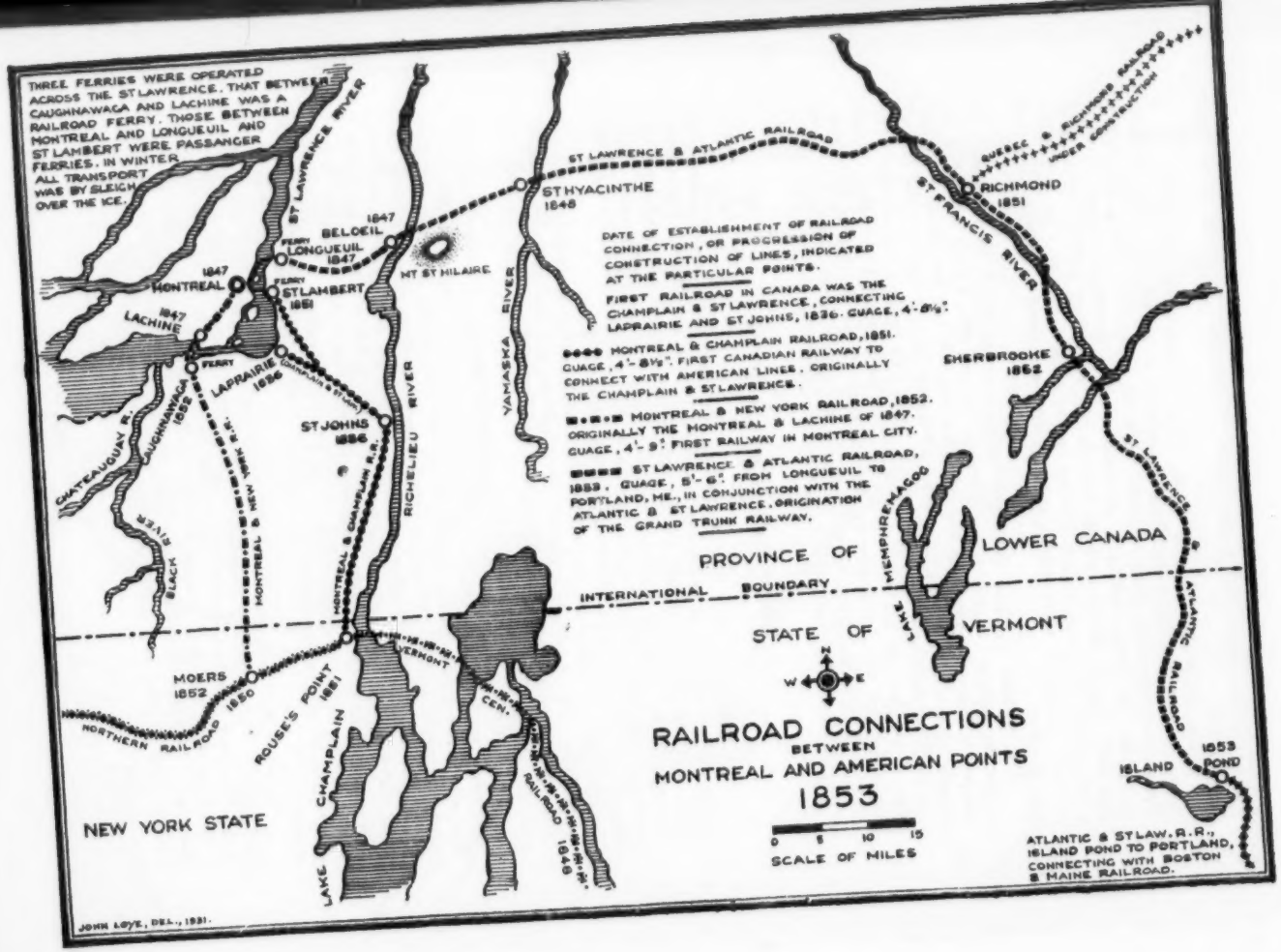
FIRST CANADIAN CHARTER

The charter of the first Canadian railroad was issued from the hands of the legislators in December of 1831. On the 25th of February, 1832, it received the Royal assent which empowered the seventy-four proprietors to proceed in the undertaking. The company was capitalized at £50,000. Stock was first offered for public subscription in the Exchange Coffee House, Montreal, on May 1st, 1832.

Preliminary surveys, expropriations and planning required three years time. The contract price of construction was £33,500., the tender of Messrs. Lindsay, Cazey & McMahon, who built the road. Work began in the spring of 1835.

The building of the railway called forth many suggestions from the interested public. The *Quebec Mercury* advised raising the rails two feet above the ground level and building the line in the direction of the most prevalent winds. Climatic conditions influenced the company to follow the advice of a Quebec engineer, J. George, and employ wooden rails edged with strap-iron, in preference to the fish-belly rails and stone sills adopted by the Liverpool & Manchester Railway, which, it was supposed, would be injuriously affected by the spring thaw. Incidentally wood rails would be far cheaper and more easily obtained. The gauge was 4′ 8½″.

The road was completed in 1836, the official opening taking place on July 21st. The Governor General of the Canadas, Lord Gosford, and three hundred guests were present. The prime movers in the building of the line were Jason C. Pierce of New York State and John Molson of Montreal. The first President was Hon. Peter McGill of Montreal. John Molson died in October, 1836, and his interests passed to his son, also named John.


THREE FERRIES WERE OPERATED ACROSS THE ST LAWRENCE. THAT BETWEEN CAUGHNAWAGA AND LACHINE WAS A RAILROAD FERRY. THOSE BETWEEN MONTREAL AND LONGUEUIL AND ST LAMBERT WERE PASSANGER FERRIES. IN WINTER ALL TRANSPORT WAS BY SLEIGH OVER THE ICE.
ST LAWRENCE RIVER
ST LAWRENCE & ATLANTIC RAILROAD
QUEBEC & RICHMOND RAILROAD UNDER CONSTRUCTION
ST HYACINTHE 1848
RICHMOND 1851
ST FRANCIS RIVER
BELOEIL 1847
FERRY LONGUEUIL 1847
MT ST HILAIRE
1847 MONTREAL
FERRY ST LAMBERT 1851
1847 LACHINE
FERRY
LAPRAIRIE 1836
YAMASKA RIVER
SHERBROOKE 1852
ST JOHNS 1836
CHATEAUGUAY R.
CAUGHNAWAGA 1852
MONTREAL & NEW YORK R.R.
RICHELIEU RIVER
MONTREAL & CHAMPLAIN R.R.
BLACK RIVER
ST LAWRENCE
PROVINCE OF LOWER CANADA
INTERNATIONAL BOUNDARY
MEMPHREMAGOG LAKE
STATE OF VERMONT
MOERS 1852
ROUSE'S POINT 1851
NORTHERN RAILROAD 1850
CHAMPLAIN
VERMONT CEN. RAILROAD 1849
NEW YORK STATE
LAKE CHAMPLAIN
ATLANTIC RAILROAD
ISLAND POND 1853
DATE OF ESTABLISHMENT OF RAILROAD CONNECTION, OR PROGRESSION OF CONSTRUCTION OF LINES, INDICATED AT THE PARTICULAR POINTS.
FIRST RAILROAD IN CANADA WAS THE CHAMPLAIN & ST LAWRENCE, CONNECTING LAPRAIRIE AND ST JOHNS, 1836. GUAGE, 4'-8½".
MONTREAL & CHAMPLAIN RAILROAD, 1851. GUAGE, 4'-8½". FIRST CANADIAN RAILWAY TO CONNECT WITH AMERICAN LINES. ORIGINALLY THE CHAMPLAIN & ST LAWRENCE.
MONTREAL & NEW YORK RAILROAD, 1852. ORIGINALLY THE MONTREAL & LACHINE OF 1847. GUAGE, 4'-9". FIRST RAILWAY IN MONTREAL CITY.
ST LAWRENCE & ATLANTIC RAILROAD, 1853. GUAGE, 5'-6". FROM LONGUEUIL TO PORTLAND, ME., IN CONJUNCTION WITH THE ATLANTIC & ST LAWRENCE, ORIGINATION OF THE GRAND TRUNK RAILWAY.
N W E
RAILROAD CONNECTIONS BETWEEN MONTREAL AND AMERICAN POINTS 1853
0 5 10 15
SCALE OF MILES
ATLANTIC & ST LAW. R.R., ISLAND POND TO PORTLAND, CONNECTING WITH BOSTON & MAINE RAILROAD.
JOHN LOYE, DEL., 1931.

THE DORCHESTER or "KITTEN"

The first locomotive on the line was named "Dorchester" after Port Dorchester, the former name of St. John. This engine, which was nicknamed "the Kitten", was a four coupled Planet of 12,544 lbs. weight and built by Robert Stephenson & Co., Newcastle-upon-Tyne, England. It bears shop number 127 on that company's list. The engine was delivered in Quebec in June, 1836 and transported to Montreal by steamboat and landed at Molson's wharf. There it was assembled by Ziba Pangborn and his son and then transhipped to Laprairie for the official opening.

THE PANGBORNS

The cost of the "Dorchester" was £1500. It was accompanied from England by an engine-driver who, upon his arrival in Montreal departed for the United States. The running of the engine thus devolved upon the Pangborns, who managed it on the opening day of the line. Thereafter the regular driver was Ziba Pangborn's son, George Washington Pangborn, a native of Vermont State. The latter's two sons, George Walter and Herbert Alonzo were both engineers on the Champlain & St. Lawrence Railroad. The son of George Walter, Edmund J. W. Pangborn, is an engineer on the Southern Pacific and a resident of Colton, California. If he can continue in service until 1936, he shall have completed a century of uninterrupted family service at the throttle of the steam locomotive. At the time of writing, Herbert Alonzo Pangborn is still living at Rockland, Ontario, now in his eighty-eighth year. He has a clear recollection of riding on the "Dorchester" with his father, and can recall his grandfather, Ziba Pangborn, in his father's home in St. John in 1847. He died of fever contracted as an engineer on one of the Molson steamboats engaged in conveying Irish immigrants from Quebec to Montreal.

AN EARLY NORRIS ENGINE

In 1838, supposedly, the company acquired a second locomotive, the "Laprairie", from the Norris Works, Philadelphia. This engine may have antedated the "Samson" of the Albion Mines Railway, which is now regarded as the second locomotive to come to British North America and which came to Pictou from England in 1838, also. Since the Norris lists have been lost, the question must remain unsettled. The "Dorchester" and the "Laprairie" were both sold in 1850 to the Lanoraie & Industrie Railroad, the first railway north of the St. Lawrence River, together with the original rolling stock of the Champlain & St. Lawrence Railroad, English-built compartment cars and goods wagons. The engines were broken up about 1880 when the Lanoraie & Industrie line was closed. One of the name-plates of the "Dorchester" is preserved in the Joliette College museum; Joliette being the present name of the former village of Industrie, named after Barthelemi de Joliette, its founder and the promoter and builder of the Lanoraie & Industrie line.

This road may be said to have been the progenitor of the Canadian Pacific the same as the Champlain & St. Lawrence was the progenitor of the Canadian National, so that the "Dorchester" and "Laprairie" were both equally associated in the beginnings of Canada's two great railway systems.

FIRST LINK WITH AMERICAN LINES

For fifteen years the Champlain & St. Lawrence remained at its original mileage, 14½, and was alone in the field. The impending completion of the Montreal to Portland line, the St. Lawrence & Atlantic Railroad, chartered in 1845 and opened in 1853, impelled the Champlain & St. Lawrence R. R. to enlarge the scope of its charter and extend southwards from St. John to Rouses Point and northwards from a point south of Laprairie to St. Lambert, opposite Montreal. The extended line was opened in July, 1851, and linked St. Lambert with all points in the United States then touched by railroad. The line later assumed the name, Montreal & Champlain Railroad. It operated a railroad ferry across the St. Lawrence River from St. Lambert to Montreal.

Competition developed in 1852 when the Montreal & Lachine Railway, chartered in 1846 and opened in 1847, extended its line to Mooers, New York, with a ferry from Lachine to Caughnawaga, and connected with the American systems; assuming the title of Montreal & New York Railway. In 1853, the St. Lawrence & Atlantic Railroad connected with the American counterpart, the Atlantic & St. Lawrence, at Island Pond, Vermont, and thus effected another connection with the American lines.

ABSORPTION BY THE GRAND TRUNK RAILWAY

Finally, the Grand Trunk Railway, chartered in 1852, which had already acquired the aforesaid Montreal to Portland line and which had been in the course of construction through the fifties, laid the last rail on the Victoria Bridge in December, 1859. This linked the city of Montreal by direct line of railroad with all other points to the south. The Montreal & Champlain and the Montreal & New York roads were handicapped by reason of their ferries at St. Lambert and Caughnawaga, which were closed for weeks at a time in the spring and fall and finally these roads too passed into the hands of the Grand Trunk Railway in 1863.

* * * * * *

Part of the original line of the Champlain & St. Lawrence Railroad still exists, now incorporated in the Canadian National Railways. A small section of the original wooden rail and strap iron is preserved in the Chateau de Ramezay Museum, Montreal. The original charter and many documents appertaining to the first railway in Canada were destroyed in the burning of the Houses of Parliament in Montreal in 1849. Many memories of the pioneer railroad have been awakened by the Canadian Railway Centenary.

The Locomotives of the Boston & Maine Railroad

By Chas. E. Fisher

FOLLOWING the list of Boston & Maine R. R. locomotives that appeared in Bulletin No. 26, came those from the Eastern R. R. and its allied lines and these will be listed at no little length.

It may not be amiss to state that the Eastern R. R. was incorporated April 14, 1836 to build a railroad from Boston to Salem, Massachusetts. The first station was in East Boston and a ferry brought the passengers to Boston. It was not until Apr. 10, 1854 that the Eastern R. R. was extended into Causeway Street, Boston and a station erected there. This station was burned on June 21, 1862 and was replaced by another station in 1893 which in turn was torn down to make room for the first North Station.

The road was opened to Salem on August 28, 1838, to Newburyport on June 17, 1840 and to Portsmouth, New Hampshire on November 9, 1840.

On March 14, 1837, the legislature of the State of Maine passed an act to incorporate the Portland, Saco & Portsmouth R. R. The charter stated that it was to build a railroad beginning at Portland and run through the towns of Scarborough, Saco, Kennebunk, North and South Berwick and Kittery, Maine to Portsmouth, N. H. The route between Portland and North Berwick is the inland route of today. Work on the road was commenced in 1841 and the road was opened to Portsmouth on Nov. 21, 1842. On January 27th, 1843, the Portland, Saco & Portsmouth R. R. was leased indefinitely to the Eastern and Boston & Maine companies. The annual rental was 6% and there was a penalty of $200,000.00 on either party for breach of contract. The road was operated independently and had its own locomotives and rolling stock. The Eastern train would be taken at Portsmouth and when South Berwick Jct. was reached, then the end of the Boston & Maine, the Boston & Maine train would be coupled on and then the combined trains proceeded to Portland. The running time was about five hours as against two hours and 15 minutes today on the "Flying Yankee".

Mr. Frances B. C. Bradlee in his history of the Eastern R. R. (Essex Institute, Salem, Mass. 1917) describes fully the troubles between the rival roads. They are too long to be set down here. Suffice it to say on May 4, 1871, the Portland, Saco & Portsmouth R. R. was leased in perpetuity to the Eastern R. R. The Boston & Maine trains were handled in such a fashion as to discourage business over that route and then the Boston & Maine built their road, nearer the shore, to Portland and this route was opened for traffic on Mar. 17, 1873.

Competition was rife between the Eastern, Boston & Maine and Boston & Lowell roads and many miles of branch roads in Massachusetts were built to connect with one of these three larger roads. Later years have proved the unwisdom of this building. On the other hand, the Eastern secured control of the Portsmouth, Great Falls & Conway and the South Berwick Branch Railroads and in July, 1870 trains were running to West Ossipee, N. H. and a new route to the White Mountains was opened. An extension was built to North Conway where connections were made with the Portland & Ogdenburgh R. R. thus affording connections for Montreal and the Great Lakes. Finally, on October 1, 1883, and not without much bitterness, the Eastern R. R. was leased to the Boston & Maine R. R. for fifty-four years and on May 9, 1890, the road was merged with the Boston & Maine R. R. and thus passed out of existence as a corporate body. So much for a brief history of the Eastern R. R., a history which has been well written by the late Mr. Bradlee.

Turning to its locomotives, the reports of the Eastern R. R. are very complete in this respect and the writer only wishes that more roads followed the example set by the Eastern R. R.

The first roster of their locomotives appears under date of June 30th, 1848 and is most interesting:

Suffolk	Locks & Canal	1838	11x16"	60"	2-2-0	I. C.
Essex	"	1838	11x16"	60"	2-2-0	I. C.
Merrimack	"	1838	11x16"	60"	2-2-0	I. C.
Rockingham	"	1838	11x16"	60"	2-2-0	I. C.
Piscataqua	"	1839	11x16"	60"	2-2-0	I. C.
Naumkeag	"	1839	11x16"	60"	2-2-0	I. C.
Gen. Foster	"	1840	11x16"	60"	2-2-0	I. C.
Sagamore	Philadelphia	1840	10½x18"	52"	4-2-0	O. C.
Huntress	"	1841	13x20"	60"	4-4-0	O. C.
Marblehead	"	1841	13x20"	48"	4-2-0	O. C.
Shawmut	New Castle	1843	11x18"	52"	4-2-0	O. C.
Boston	Hinkley	1844	13½x20"	60"	4-4-0	O. C.
Portland	"	1845	13½x20"	60"	4-4-0	O. C.
St. Lawrence	"	1846	14x18"	60"	4-4-0	I. C.
Portsmouth	"	1846	15x20"	52"	4-4-0	O. C.
Rough & Ready	Taunton	1847	14x18"	60"	4-4-0	I. C.
Witch	"	1847	14x18"	60"	4-4-0	I. C.
Magnolia	"	1848	14⅝x18"	60"	4-4-0	I. C.
Ironsides	"	1848	14⅝x18"	60"	4-4-0	I. C.

I. C.—Inside Connected. O. C.—Outside Connected.
The "Sagamore", "Huntress" and "Marblehead" were built by William Norris.

In presenting Mr. Yeaton's lists with my own additions thereto, I will try and make it as simple as possible. The Eastern R. R. locomotives when taken over by the Boston & Maine R. R. had 100 added to their numbers. On the other hand the Eastern R. R. had discontinued naming their locomotives prior to the lease so that the Boston & Maine not only renumbered but renamed the Eastern R. R. locomotives as well. For that reason the B & M number and name will follow the last Eastern R. R. locomotive of that particular number.

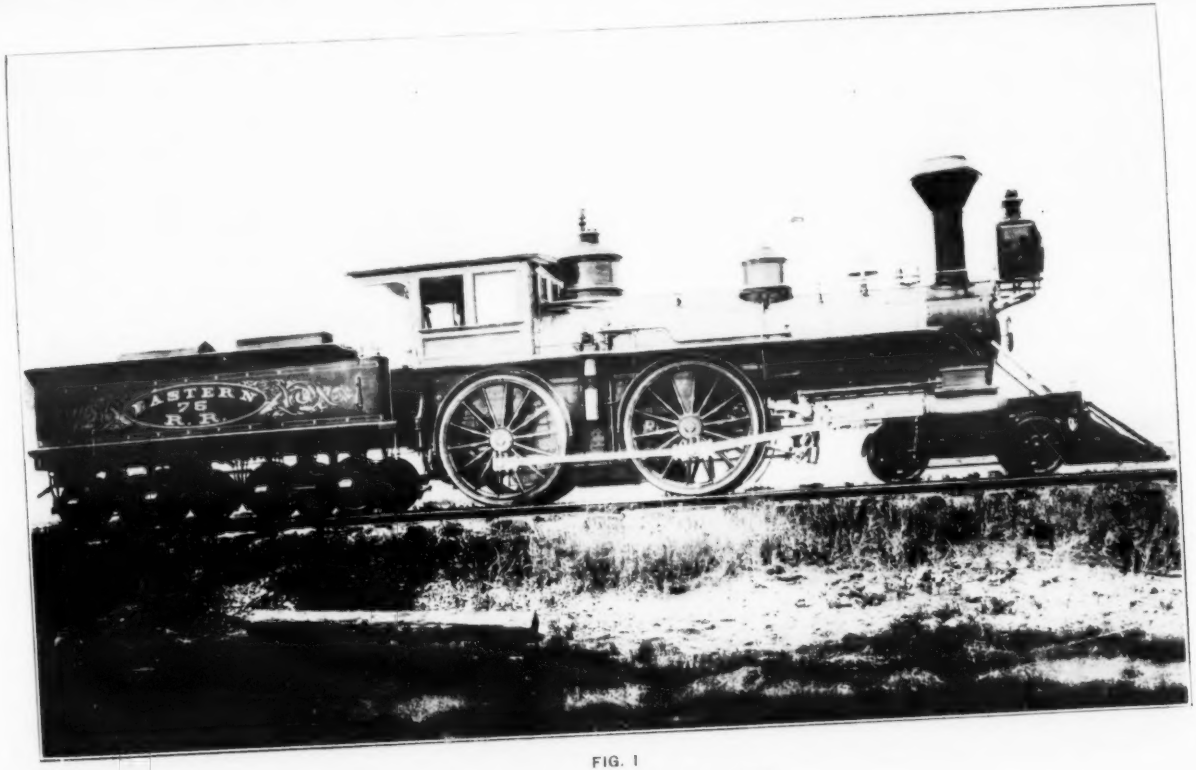


FIG. 1

Eastern R. R. #75. Eastern R. R. 1872

FIG. II

Eastern R. R. #105. Rogers, 1882.

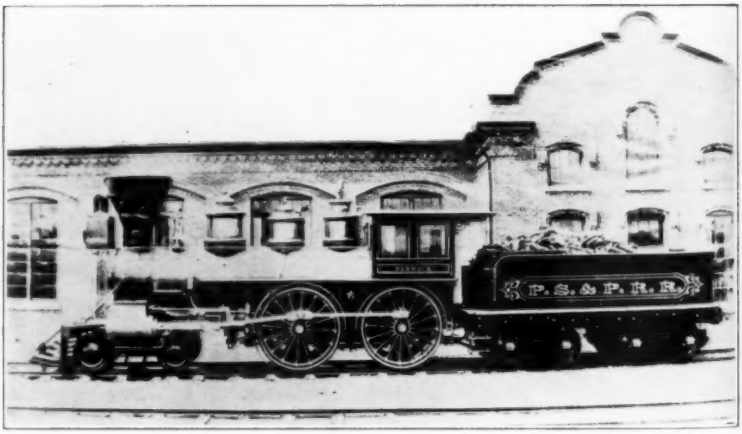


FIG. III

P. S. & P. R. R. "Berwick". Portland, 1869

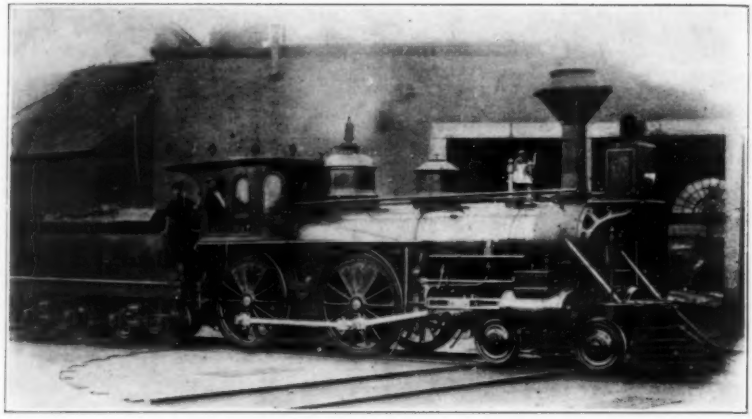
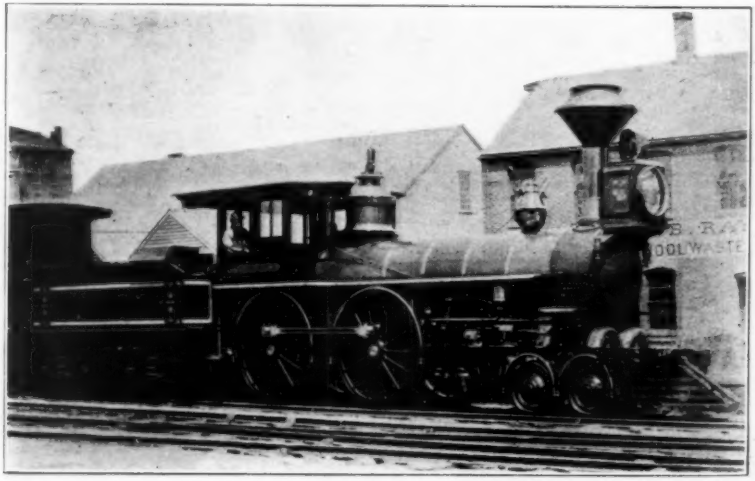


FIG. V

W. & N. R. R. "Geo. T. Rice." Taunton L. W. 1864.
Courtesy Benj. Thomas.



W. & N. R. R. "Worcester." Hinkley & Drury. 1848.
Courtesy Benj. Thomas

1	Merrimack	Locks & Canal		1838	11x16″	2-2-0	Scrap E R R
	Maverick	Hinkley & Wms	# 749	1865	13x22″	0-4-0	
101	Maverick						Scrap B & M 1884
101	Maverick	Rhode Island	#1524	1885	16x22″	0-6-0	Renumbered 103
2	Naumkeag	Locks & Canal		1839	11x16″	2-2-0	Scrap E R R
	Nahant	Mason	# 104	1860	16x22″	4-4-0	
102	Gen. Hancock						Scrap B & M 1885
102	Gen. Hancock	Mason	# 730	1885	18x22″	4-4-0	Renumbered 820
3	Rockingham	Locks & Canal		1838	11x16″	2-2-0	Unknown
	Suffolk	Locks & Canal		1838	11x16″	2-2-0	Scrap E R R
	Ossipee	Souther		1856	13x20″	4-4-0	From P G F & C. "Carroll"
103	Wenham						Scrap B & M 1895
4	Essex	Locks & Canal		1838	11x16″	2-2-0	Scrap E R R
	Ipswich	E. Boston		1860	———	4-4-0	Scrap E R R 1881
	Ipswich	Rhode Island		1882	17x24″	4-4-0	
104	Ipswich						Rebuilt & renumbered 696
5	Sagamore	Norris		1840	10½x18″	4-2-0	Scrap E R R
	Marblehead	Norris		1841	13x20″	4-2-0	Scrap E R R
	Penobscot	Rhode Island		1881	17x24″	4-4-0	
105	Penobscot						Renumbered 620
6	Huntress	Norris		1841	13x20″	4-4-0	Scrap E R R
	Cape Ann	Taunton L W	# 271	1860	15x22″	4-4-0	
106	Forbes						Scrap B & M 1887
106	Forbes	Mason	# 742	1887	16x24″	0-4-0	Renumbered 72
7	Shawmut	New Castle		1843	11x18″	4-2-0	Scrap E R R
	Gov. Endicott	Boston L W		1857	15x22″	4-4-0	
107	Union						Scrap B & M 1884
107	Union	Rhode Island	#1525	1885	16x22″	0-6-0	Renumbered 104
8	Portland	Hinkley & Drury	# 44	1845	13½x20″	4-4-0	Scrap E R R 1868
	Othello	Taunton L W	# 453	1869	14x24″	0-6-0	
108	Lynnfield						Scrap B & M 1891
9	Portsmouth	Hinkley & Drury	# 70	1845	15x20″	4-4-0	Scrap E R R 1872
	Portsmouth	Baldwin	#3401	1874	17x24″	4-4-0	
109	Mousam						Scrap B & M 1910
10	Boston	Hinkley & Drury	# 35	1845	13½x20″	4-2-0	Scrap E R R
	Boston	Rhode Island		1878	18x24″	2-6-0	
110	Scarboro						Scrap B & M 1888
110	Scarboro	Manchester		1889	18x24″	4-4-0	Renumbered 870
11	St. Lawrence	Hinkley & Drury	# 82	1846	14x18″	4-4-0	Exchanged for "Union" from P G F & C R R
	West Beach	?		———			
	Rye Beach	Eastern R R		1863	15x22″	4-4-0	Scrap E R R 1881
	Rye Beach	Eastern R R		1885	15x22″	4-4-0	
111	Montrose						Scrap B & M 1905
12	Rough & Ready	Taunton	# 1	1847	14x18″	4-4-0	Scrap E R R
	Lawrence	Rhode Island		1882	17x24″	4-4-0	
112	Arundel					4-4-0	Rebuilt and renumbered 697
13	Witch	Taunton	# 2	1847	14x18″	4-4-0	Scrap E R R
	Union	Hinkley & Drury		1853	?	4-2-0	
	Union	Eastern R R		1870	13x20″	0-4-0	
113	Tiger					0-4-0	Scrap B & M 1886
113	Tiger	B & M R R		1887	15x22″	0-4-0	Scrap B & M 1906
14	Magnolia	Taunton	# 11	1848	14⅝x18″	4-4-0	Scrap E R R 1878
	Magnolia	Rhode Island		1879	17x24″	4-4-0	
114	Bonnebeag					4-4-0	Rebuilt & renumbered 694
15	Ironsides	Taunton	# 15	1848	14⅝x18″	4-4-0	Scrap E R R
	Not Named	Portland	# 522	1884	15x22″	0-4-0	

115	Binney						0-4-0 Scrap B & M
16	Binney	Rogers K & G	#	157	1849	15x18″	4-4-0 Scrap E R R
	Binney	Rhode Island			1880	17x24″	4-4-0
116	Rockport						4-4-0 Rebuilt & re-bered 691
17	Bryant	Rogers K & G	#	159	1849	15x18″	4-4-0 Scrap E R R
	Bryant	Eastern R R			1880	14x22″	0-4-0
117	Linden						0-4-0 Sold—1896
18	Courier	?			——		
	Agawam	Eastern R R			1850	?	4-4-0
118	Gen. Lander						4-4-0 Scrap B & M
118	Gen. Lander	Mason	#	731	1886	18x22″	4-4-0 Renumbered 8
19	Salem	Wilmarth			1851	16x20″	4-4-0 Scrap E R R
	Salem	Rhode Island			1882	17x22″	4-4-0
119	Mayflower						4-4-0 Scrap B & M
20	Danvers	Souther			1851	15x20″	4-4-0 Scrap E R R
	Hampton	Taunton	#	289	1862	15x22″	4-4-0
120	Washington						4-4-0 Scrap B & M
120	Washington	Mason	#	732	1886	18x22″	4-4-0 Scrap B & M
21	Traveller	Souther			1851	15x20″	4-4-0 Scrap E R R
	Swampscott	Mason	#	122	1862	15x22″	4-4-0
121	Agawam						4-4-0 Scrap B & M
121	Agawam	Rhode Island	#	1526	1885	16x22″	0-6-0 Rebuilt & re-bered 105
22	Express	Souther			1851	15x20″	4-4-0 Scrap E R R
	Express	Hinkley	#	1201	1874	16x24″	4-4-0
122	Moat Mountain						4-4-0 Scrap B & M
23	Col. Adams	Boston L W	#	509	1854	14x24″	4-4-0
123	Wellington						4-4-0 Scrap B & M
123	Wellington	Mason	#	733	1886	18x22″	4-4-0 Renumbered
24	Beverly	Boston L W	#	510	1854	14x24″	4-4-0
124	Kearsarge						4-4-0 Scrap B & M
124	Kearsarge	Rhode Island	#	1532	1885	17x24″	4-4-0 Renumbered 7
25	Newburyport	Boston L W	#	512	1854	14x24″	4-4-0
125	City of Lynn						4-4-0 Scrap B & M
125	City of Lynn	Rhode Island	#	1533	1885	17x24″	4-4-0 Renumbered 7
26	Salmon	Boston L W			1854	?	4-4-0
126	Beverly						4-4-0 Scrap B & M
126	Beverly	Rhode Island	#	1534	1885	17x24″	4-4-0 Renumbered
27	Chelsea	Boston L W	#	544	1854	15x24″	4-4-0 Scrap E R R
	Chelsea	Hinkley	#	1203	1874	16x24″	4-4-0
127	Conway	[illegible]					4-4-0 Rebuilt & re-bered 601
28	City of Lynn	Taunton	#	199	1855	14x20″	4-4-0
128	Byfield						4-4-0 Scrap B & M
128	Byfield	B & M R R			1885	15x22″	4-4-0 Scrap 1905
29	Tiger	Souther			1854	13x20″	4-4-0 Scrap E R R
	Not Named	Portland	#	531	1885	17x24″	4-4-0
129	Augusta						4-4-0 Renumbered
30	Eagle	?			?		Sold to Cala-Baring R
	Rockport	Hinkley	#	847	1868	16x24″	4-4-0
130	Conqueror						4-4-0 Scrap B & M
130	Conqueror	Mason	#	735	1886	16x24″	0-4-0 Scrap 1910
31	Salisbury	Taunton	#	333	1864	15x22″	4-4-0
131	Atherton						4-4-0 Scrap B & M
131	Atherton	B & M R R			1891	17x22″	4-4-0 Renumbered
32	Rockingham	Eastern R R			1864	16x22″	4-4-0
132	Bell Rock						4-4-0 Scrap B & M
132	Bell Rock	B & M R R			1891	17x22″	4-4-0 Renumbered
33	Essex	Taunton	#	371	1865	16x22″	4-4-0
133	Carroll						4-4-0 Scrap B & M

B & M 1902
E R R 1879

lt & renum-
ed 691
E R R

-1896

B & M 1885
nbered 821
E R R 1881

B & M 1907
E R R

B & M 1886
B & M 1909
E R R

B & M 1885
lt & renum-
ed 105
E R R

B & M 1908

B & M 1885
mbered 822

B & M 1884
mbered 740

B & M 1885
mbered 741

B & M
mbered 742
E R R 1873

ilt & renum-
ed 601

B & M 1885
1905
E R R

mbered 616
to Calais &
ring R R

B & M 1885
1910

B & M 1890
mbered 632

B & M 1890
mbered 633

B & M 1886

133	Carroll	Mason	# 743	1887	16x24″	0-4-0	Renumbered 73
34	Merrimac	Mason	# 220	1865	16x22″	4-4-0	
134	Boxford					4-4-0	Scrap B & M 1886
134	Boxford	Mason	# 744	1887	16x24″	0-4-0	Renumbered 74
35	Albert Thorndike	Mason	# 230	1866	9x20″	Forney	
135	Seabrook					Forney	Scrap B & M 1888
135	Seabrook	Manchester		1889	18x24″	4-4-0	Renumbered 871
36	John Howe	Mason	# 229	1866	16x22″	4-4-0	
136	John Howe					4-4-0	Scrap B & M 1889
136	John Howe	B & M R R		1890	17x22″	4-4-0	Renumbered 634
37	D. A. Neal	Hinkley	# 777	1866	15x24″	4-4-0	
137	Faulkner					4-4-0	Scrap B & M 1889
137	Faulkner	Hinkley		1889	18x24″	4-4-0	Scrap B & M 1906
38	Geo. Peabody	McKay & Aldus		1866	16x22″	4-4-0	
138	Cape Ann					4-4-0	Scrap B & M 1886
138	Cape Ann	Portland	# 568	1887	18x24″	4-4-0	Rebuilt & renumbered 850
39	Excelsior	Eastern R. R.		1867	16x24″	4-4-0	
139	Peabody					4-4-0	Scrap B & M 1884
139	Peabody	Hinkley		1885		4-4-0	Renumbered 602
40	Conqueror	Mason	# 254	1867	12x22″	4-4-0	
140	Chelsea					4-4-0	Scrap B & M 1884
140	Chelsea	Rhode Island	#1535	1885	17x24″	4-4-0	Renumbered 743
41	Great Falls	Taunton	# 407	1867	16x22″	4-4-0	
141	Great Falls					4-4-0	Renumbered 936
42	Danvers	Eastern R R		1867	14x22″	0-4-0	
142	Amesbury					0-4-0	Scrap B & M 1891
43	City of Portland	Eastern R. R.		1868	16x24″	4-4-0	
143	Cocheco					4-4-0	Scrap B & M 1889
44	King Lear	Eastern R R		1869	16x24″	4-4-0	
144	Huntress					4-4-0	Scrap B & M 1886
144	Huntress	Portland	# 561	1887	18x22″	4-4-0	Renumbered 845
45	Coriolanus	Eastern R R		1869	16x24″	4-4-0	
145	Clifton					4-4-0	
145	Wm. Smith					4-4-0	Scrap B & M 1891
46	Hamlet	Eastern R R		1869	14x22″	4-4-0	
146	Puritan					4-4-0	Scrap B & M 1891
47	MacBeth	Eastern R R		1870	15x22″	4-4-0	
147	Topsfield					4-4-0	Scrap B & M 1885
147	Topsfield	Mason	# 737	1886	16x24″	0-4-0	Renumbered 69
48	Kearsarge	Eastern R R		1870	16x24″	4-4-0	
148	Hampton					4-4-0	Scrap B & M 1899
49	Tempest	Eastern R R		1871	13x20″	0-4-0	
149	Rowley					0-4-0	Scrap B & M 1894
50	Katahdin	Eastern R R		1871	16x24″	4-4-0	
150	Point of Pines					4-4-0	Scrap B & M 1889
150	Point of Pines	B & M R R		1890	17x22″	4-4-0	Scrap B & M 1908
51	Everett	Hinkley	#1029	1871	16x24″	4-4-0	
151	Madison					4-4-0	Scrap B & M 1895
52	Bangor	Rhode Island	# 264	1871	16x24″	4-4-0	
152	Henry L. Williams					4-4-0	Scrap B & M 1896
53	New Hampshire	Eastern R R		1871	17x22″	4-4-0	
153	Nahant					4-4-0	Scrap B & M 1899
54	Carroll	Souther		1856	13x20″	4-4-0	From P G F & C R R
154	Salem					4-4-0	Scrap B & M 1884
154	Salem	Rhode Island	#1536	1885	17x24″	4-4-0	Renumbered 744
55	Conway	Hinkley	# 289	1850	14x18″	4-4-0	Scrap E R R—From P G F & C R R

55	Conway	Hinkley		1875	16x24"	4-4-0
155	Devereaux					4-4-0 Scrap B & M 1890
56	St. Lawrence	Hinkley	# 82	1846	14x18"	4-4-0 From P G F & C R R
156	Portsmouth					4-4-0 Scrap B & M 1884
156	Portsmouth	Rhode Island	#1537	1885	17x24"	4-4-0 Renumbered 745
57	Chocorua	Eastern R R		1871	14x22"	4-4-0
157	North Wind					4-4-0 Scrap B & M 1890
58	Massachusetts	Hinkley	#1048	1871	16x24"	4-4-0
158	Farmington					4-4-0 Scrap B & M 1894
59	Atlantic	Rhode Island		1871	16x24"	4-4-0
159	America					4-4-0 Scrap B & M 1902
60	America	Rhode Island	# 368	1871	16x24"	4-4-0
160	Pilgrim					4-4-0 Scrap B & M 1908
61	Champion	Rhode Island		1871	17x24"	2-6-0
161	Champion					2-6-0 Scrap B & M 1892
62	Suffolk	Eastern R R		1871	16x24"	4-4-0
162	Rochester					4-4-0 Scrap B & M 1906
63	Not Named	Eastern R R		1872	13x20"	0-4-0
163	Prides					0-4-0 Scrap B & M 1894
64	Not Named	Rhode Island	# 387	1872	17x24"	4-4-0
164	Wolfboro					4-4-0 Scrap B & M 1888
164	Wolfboro	Manchester		1889	17x24"	4-4-0 Renumbered 649
65	Not Named	Rhode Island	# 838	1880	17x24"	4-4-0
165	Gloucester					4-4-0 Rebuilt & renumbered 692
66	Not Named	Hinkley	#1096	1872	15x22"	4-4-0
166	Ossipee					4-4-0 Scrap B & M 1896
67	Not Named	Hinkley		1872	15x22"	4-4-0
167	Newington					4-4-0 Scrap B & M 1892
68	Not Named	Hinkley		1872	15x22"	4-4-0
168	Beach Bluff					4-4-0 Scrap B & M 1886
168	Beach Bluff	Portland	# 569	1887	18x24"	4-4-0 Rebuilt & renumbered 858
69	Not Named	Rhode Island	# 398	1872	16x24"	4-4-0
169	Boscobel					4-4-0 Scrap B & M 1903
70	Not Named	Rhode Island	# 399	1872	16x24"	4-4-0
170	Rye Beach					4-4-0 Scrap B & M 1902
71	Not Named	Eastern R R		1872	13x20"	0-4-0
171	Naumkeag					0-4-0 Scrap B & M 1894
72	Not Named	Hinkley	#1105	1872	17x24"	4-4-0
172	George Hood					4-4-0 Sold to Poulterer & Co.
73	Not Named	Hinkley	#1106	1872	17x24"	4-4-0
173	Bangor					4-4-0 Scrap B & M 1891
74	Not Named	Hinkley	#1108	1872	17x24"	4-4-0
174	Somersworth					4-4-0 Scrap B & M 1903
75	Not Named	Eastern R R		1872	17x24"	4-4-0
175	John Thompson					4-4-0 Scrap B & M 1903
76	Not Named	Eastern R R		1873	13x20"	0-4-0
176	Saugus					0-4-0 Scrap B & M 1894
77	Not Named	Baldwin	#3306	1873	17x24"	4-4-0
177	Salisbury					4-4-0 Rebuilt & renumbered 660
78	Not Named	Eastern R R		1878	17x24"	4-4-0
178	Passaconway					4-4-0 Scrap B & M 1908
79	Not Named	Hinkley	# 259	1850	16x20"	4-4-0 P S & P #4, scrap E R R
79	Not Named	Portland	# 523	1884	15x22"	4-4-0
179	Hamilton					4-4-0 Scrap B & M 1905
80	Not Named	Hinkley	# 256	1849	16x20"	4-4-0 P S & P #5, scrap E R R

80 Not Named	Rhode Island		1882	18x22"	4-4-0	
180 Col. Coleman					4-4-0	Rebuilt & renumbered 695
81 Not Named	Hinkley	# 363	1852	14x22"	4-4-0	P S & P, #7, scrap E R R
81 Not Named	Rhode Island		1881	18x24"	4-4-0	
181 Excelsior					4-4-0	Rebuilt & renumbered 621
82 Not Named	Hinkley	# 537	1854	16x20"	4-4-0	P S & P #8, scrap E R R
82 Not Named	Portland	# 532	1885	17x24"	4-4-0	
182 Enoch Paine					4-4-0	Renumbered 617
83 Not Named	Boston L W		1861	15x22"	4-4-0	P S & P #9
183 Manchester					4-4-0	Scrap B & M 1884
183 Manchester	Rhode Island	#1538	1885	17x24"	4-4-0	Rebuilt & renumbered 746
84 Not Named	?		——			P S & P #10, Scrap E R R
84 Not Named	Eastern R R		1879	14x22"	0-4-0	
184 Laconia					0-4-0	Scrap B & M 1899
85 Not Named	Portland	# 127	1865	16x24"	4-4-0	P S & P #11, Scrap E R R
85 Not Named	Eastern R R		1884	16x24"	4-4-0	
185 Agamenticus					4-4-0	Scrap B & M 1903
86 Not Named	Portland	# 137	1866	15x22"	4-4-0	P S & P #12
186 Atalanta					4-4-0	Scrap B & M 1884
186 Atalanta	Rhode Island	#1539	1885	17x24"	4-4-0	Renumbered 747
87 Not Named	Portland	# 138	1866	15x22"	4-4-0	P S & P #13
187 Lebanon					4-4-0	Scrap B & M 1902
88 Not Named	Hinkley		1867	14x22"	0-4-0	P S & P #14
188 Wells					0-4-0	Scrap B & M 1900
89 Not Named	Hinkley & Wms		1867	15x22"	4-4-0	Sold to Somerset R R #2
						P S & P #15
89 Not Named	Rhode Island	#1540	1885	17x24"	4-4-0	
189 Revere					4-4-0	Scrap B & M 1906
90 Not Named	Hinkley & Wms	# 862	1869	15x22"	4-4-0	Sold to Somerset R R #1
						P S & P #16
90 Not Named	Rhode Island	#1541	1885	17x24"	4-4-0	
190 Piscataqua					4-4-0	Renumbered 748
91 Not Named	Portland	# 159	1869	16x24"	4-4-0	P S & P #17
191 Chocorua					4-4-0	Scrap B & M 1885
191 Chocorua	Mason	# 734	1886	16x24"	0-4-0	Renumbered 70
92 Not Named	Portland	# 175	1870	16x22"	4-4-0	P S & P #18
92 Rebuilt by	Eastern R R		1884		4-4-0	
192 Kennebec					4-4-0	Scrap B & M 1886
192 Kennebec	Portland	# 566	1887	18x24"	4-4-0	Renumbered 851
93 Not Named	Portland	# 185	1871	16x24"	4-4-0	P S & P #19
193 Glenwood					4-4-0	Scrap B & M 1886
193 Glenwood	Mason	# 736	1886	16x24"	0-4-0	Scrap B & M 1910
94 Not Named	Portland	# 200	1871	17x24"	4-4-0	P S & P #21
						Scrap E R R 1880
94 Not Named	Eastern R R		1883	17x24"	4-4-0	
194 Gov. Goodwin					4-4-0	Scrap B & M 1906
95 Not Named	Hinkley & Wms		1872	15x22"	4-4-0	P S & P #22
195 Francis Chase					4-4-0	Scrap B & M 1886
195 Francis Chase	Portland	# 567	1887	18x24"	4-4-0	Renumbered 852
96 Not Named	Rhode Island		1878	18x24"	2-6-0	
196 Greenland					2-6-0	Scrap B & M 1889
196 Greenland	Manchester		1889	18x24"	4-4-0	Renumbered 872

97	Not Named	Rhode Island		1878	18x24″	2-6-0
197	Tewksbury					2-6-0 Scrap B & M 1889
197	Tewksbury	Manchester		1889	18x24″	4-4-0 Renumbered 873
98	Not Named	Rhode Island		1881	18x24″	4-4-0
198	Gov. Endicott					4-4-0 Rebuilt & renumbered 622
99	Not Named	Eastern R R		1881	15x22″	0-4-0
199	York					0-4-0 Scrap B & M 1905
100	Not Named	Rhode Island		1882	17x24″	4-4-0
200	Sagamore					4-4-0 Rebuilt & renumbered 698
101	Not Named	Rhode Island		1882	17x24″	4-4-0
201	The Wentworth					4-4-0 Rebuilt & renumbered 690
102	Not Named	Rhode Island		1882	17x24″	4-4-0
202	Montserrat					4-4-0 Rebuilt & renumbered 699
103	Not Named	Manchester		1882	15x22″	0-4-0
203	Elliot					0-4-0 Scrap B & M 1905
104	Not Named	Manchester		1882	15x22″	0-4-0
204	Kittery					0-4-0 Scrap B & M 1908
105	Not Named	Rogers	#4123	1882	16x24″	4-4-0
205	Bryant					4-4-0 Scrap B & M 1905
106	Not Named	Eastern R R		1882	17x24″	4-4-0
206	Magnolia					4-4-0 Rebuilt & renumbered 670
107	Not Named	Taunton	# 893	1883	17x24″	4-4-0
207	Lovell					4-4-0 Scrap B & M 1904
108	Not Named	Taunton	# 894	1883	17x24″	4-4-0
208	Broadway					4-4-0 Rebuilt & renumbered 673
109	Not Named	Taunton		1883	17x24″	4-4-0
209	Wamesit					4-4-0 Rebuilt & renumbered 671
110	Not Named	Rhode Island		1883	18x24″	4-4-0
210	Longfellow					4-4-0 Renumbered 623
111	Not Named	Portland	# 533	1885	17x24″	4-4-0
211	James Bowdoin					4-4-0 Rebuilt & renumbered 675
112	Not Named	Portland	# 534	1885	18x22″	4-4-0
212	Major Rice					4-4-0 Scrap B & M 1908
113	Not Named	Portland	# 535	1885	18x22″	4-4-0
213	W. P. Fessenden					4-4-0 Renumbered 840
114	Not Named	Portland	# 536	1885	18x22″	4-4-0
214	Falmouth					4-4-0 Renumbered 841
115	Not Named	Hinkley		1884	17x24″	4-4-0
215	Middleton					4-4-0 Scrap B & M 1908

To those of our members who possess copies of Mr. Yeaton's list, they will find many additions in the builders and dates of construction. In making my additions and corrections to this list I have been governed by the reports of the Eastern R. R. In the matter of #3, "Ossipee", Souther, 1854, which Mr. Yeaton states was not scrapped until 1895, I cannot agree with him as the Eastern roster of 1883 indicates a Baldwin engine of 1874 filling that number. Mr. Yeaton states the #4, "Essex" was not scrapped until 1881 whereas the engine does not appear on the Eastern roster of 1861. The #35, "Thorndike" which Mr. Yeaton states was scrapped in 1888 appears on the 1883 roster as a Rhode Island, built

in 1878. This report of 1883 states that all engines have two pairs of drivers except Nos. 10, 35, 96 and 97 and these engines have three pairs of drivers. Mr. Yeaton notes the "Ossipee" #3 was exchanged for the "Carroll" from the Portsmouth, Great Falls and Conway R. R. and name changed to "Ossipee". In a like fashion the "St. Lawrence", #11 was exchanged with the "Union" and numbered 13 from the same road. "The "Carroll" #54, originally the "Ossipee" #3; the "Conway" #55 and the "St. Lawrence" #56, originally #11 were acquired from the Portsmouth, Great Falls & Conway R. R. when that road was leased to the Eastern R. R. in 1871.

In the Annual Report of 1843 of the Portland, Saco & Portsmouth R. R., will be found an early roster of their locomotives. These were as follows:

Casco	Hinkley & Drury	1842
Saco	Hinkley & Drury	1842
York	Hinkley & Drury	1842
Cumberland	Hinkley & Drury	1841
Kennebec	Baldwin & Whitney	——
Penobscot	Baldwin & Whitney	——

The report indicates the last two engines were ordered that year (1843) but the engines had not been delivered. The records of the Baldwin Locomotive Works do not indicate that they built any locomotives for this road but in 1843 they constructed two locomotives at the request of the Philadelphia Loan Co.

Turning now to the list furnished by Mr. Yeaton, it will be remembered the Portland, Saco & Portsmouth R. R. was leased to the Eastern R. R. on May 4, 1871 and that upon the ownership of the road, the Eastern R. R. removed the names from the Portland, Saco & Portsmouth R. R. locomotives, renumbering them in their own series which will be indicated in the following list. It is also of interest to note the first engines built not only by Hinkley & Drury but that of the Portland Co. as well were delivered to this road.

	Cumberland	Hinkley & Drury	#	1	1841	10½x20″	4-2-0	Scrap P S & P
	York	Hinkley & Drury	#	3	1842	10½x20″	4-2-0	Scrap P S & P
	Saco	Hinkley & Drury	#	10	1842	10½x20″	4-2-0	Scrap P S & P
	Atlantic	Hinkley & Drury	#	75	1846	14x18″	4-4-0	Scrap P S & P
	Kennebec	Baldwin			1843	?	?	Scrap P S & P
	Augusta	Portland	#	1	1848	14x20″	4-4-0	Scrap P S & P
1	Montreal	Hinkley & Drury	#	38	1845	13½x20″	4-4-0	Scrap E R R 1871
2	Casco	Hinkley & Drury	#	11	1842	10½x20″	4-2-0	Scrap P S & P
2	Casco	?						E R R #65 Scrap 1878
3	Portland	Portland	#	4	1848	14x20″	4-4-0	E R R #78 Scrap 1877
4	Bangor	Hinkley & Drury	#	259	1850	16x20″	4-4-0	E R R #79 Scrap 1882
5	Fire King	Hinkley & Drury	#	256	1849	16x20″	4-4-0	E R R #80 Scrap 1881
6	Uncle Sam	Hinkley & Drury	#	295	1851	16x20″	4-4-0	Scrap E R R 1871
7	Tom Crawford Renamed: "James Sweetser"	Hinkley & Drury	#	364	1852	14x22″	4-4-0	E R R #81 Scrap 1880
8	Piscataqua	Hinkley & Drury	#	537	1854	16x20″	4-4-0	E R R #82 Scrap 1883
9	Gov. Godwin	Boston L W			1861	15x22″	4-4-0	E R R #83 Scrap 1884
10	Laconia	?						E R R #84 Scrap 1879

11	Agamenticus	Portland	#127	1865	16x24″	4-4-0	E R R	#85 Scrap 1883
12	Bonnebeag	Portland	#137	1866	15x22″	4-4-0	E R R	#86 Scrap 1884
13	Mousam	Portland	#138	1866	15x22″	4-4-0	E R R	#87 Scrap 1902
14	Cyclops	Hinkley & Wms		1867	14x22″	0-4-0	E R R	#88 Scrap 1900
15	North Wind	Hinkley & Wms		1867			E R R	#89. Sold Somerset R R # 2.
16	Gov. Cony	Boston L W	#862	1868		4-4-0	E R R	#90. Sold Somerset R R #1.
17	Berwick	Portland	#159	1869	16x24″	4-4-0	E R R	#91 Scrap 1885
18	Longfellow	Portland	#175	1870	16x22″	4-4-0	E R R	#92 Scrap 1886
19	Fessenden	Portland	#185	1871	16x24″	4-4-0	E R R	#93 Scrap 1886
20	Mattawamkeag	?				4-4-0	Scrap E R R	
21	Scarborough	Portland	#200	1871	17x24″	4-4-0	E R R	# 94 Scrap 1880
22	Francis Chase	Hinkley		1872	15x22″	4-4-0	E R R	#95 Scrap 1886

Turning now to the Boston & Maine series of numbers the following ten engines appear before those of the Worcester, Nashua & Rochester engines.

216	Gen. Hooker	Portland	#562	1887	18x22″	4-4-0	Reb. & renumbered 846
217	Gen. Thomas	Portland	#563	1887	18x22″	4-4-0	Reb. & renumbered 847
218	Masconomo	Portland	#577	1888	18x24″	4-4-0	Reb. & renumbered 804
219	Massasoit	Portland	#578	1888	18x24″	4-4-0	Renumbered 231 (Old series)
219	Wizard	Manchester		1888	16x24″	0-4-0	Renumbered 76
220	Norseman	Manchester		1888	16x24″	0-4-0	Renumbered 77
221	Viking	Manchester		1888	16x24″	0-4-0	Renumbered 78
222	Harvard	Mason	#738	1886	16x24″	0-4-0	Scrap 1910
223	Waushacun	Manchester		1886	18x24″	4-4-0	Renumbered 809
224	Lee	Mason	#745	1887	16x24″	0-4-0	Renumbered 75

WORCESTER, NASHUA & ROCHESTER R. R.

The locomotives from this road were the next to be included in the former Boston & Maine series of numbers. The Worcester & Nashua R. R., forty-five miles in length and connecting the two cities bearing that name, was opened for traffic on July 3rd, 1848. In 1872 this road entered into a contract with the Nashua & Rochester R. R., then under construction between those two cities, whereby this road when completed would be leased to the Worcester & Nashua R. R., and one of the terms of the agreement was that the Worcester & Nashua R. R. was to furnish the motive power and rolling stock. The Nashua & Rochester R. R. was opened for traffic on Nov. 24, 1874. At Rochester, N. H., a connection was made with the Portland & Rochester R. R. for Portland, Maine. On December 1st, 1883 the Worcester & Nashua and Nashua & Rochester roads were consolidated into the Worcester, Nashua & Rochester R. R. This latter company was leased to the Boston & Maine R. R. for fifty-four years on Jan. 1, 1886 and was merged into the Boston & Maine R. R. in June, 1911.

Turning to the Annual Reports of the Worcester & Nashua R. R. we find locomotive rosters for the years 1854 and 1856. The 1854 roster indicates an ownership of ten locomotives as follows:

Nashua	Boston L W	1848	20 tons
Worcester	Boston L W	1848	20 tons
Groton	Boston L W	1849	20 tons
Lancaster	Boston L W	1848	20 tons
West Boylston	Boston L W	1848	22 tons
Pepperell	Boston L W	1849	22 tons
Clinton	Boston L W	1852	23 tons
Harvard	J. Souther	1853	23 tons
Quinsigamond	Boston L W	1854	16 tons
Oakdale	Baldwin	——	10 tons

The Report for 1856 adds the following:

J. W. Stowell	Amoskeag	1856

The "Oakdale" does not appear in the Baldwin records and I believe we can safely assume that it was purchased second hand from another road by the Worcester & Nashua R. R. The engine is not included in Mr. Yeaton's list.

The engines of the Worcester, Nashua & Rochester R. R. were not numbered in numerical order as in the case of the Eastern R. R. and rather than present two almost identical lists, I will first list the engines which did not bear Boston & Maine numbers:

	West Boylston	Boston L W	#202	1848	15x20"	4-4-0	Scrap W & N
	Pepperell	Boston L W	#228	1849	15x20"	4-4-0	Scrap W & N
1	Lancaster	Boston L W	#185	1848	15x18"	4-4-0	Scrap W & N
2	Nashua	Boston L W	#213	1848	15x18"	4-4-0	Scrap W & N 1877
3	Groton	Boston L W	#222	1849	15x18"	4-4-0	Scrap W & N 1870
4	Worcester	Boston L W	#211	1848	15x18"	4-4-0	Scrap W & N 1882
9	Quinsigamond	Boston L W	#523	1854	15x20"	0-4-0	Scrap W N & R 1883
17	A F Lawrence	Rhode Island		1872	?	2-6-0	Scrap B & M 1886
24	Clinton	Boston L W	#386	1852	14x20"	4-4-0	Scrap W N & R 1883

The balance of the engines bore Boston & Maine numbers and since this is the Boston & Maine series of numbers those of the W. N. & R. will not appear consecutively. The B & M number and name will appear on the following line.

8	T. W. Hammond	Hinkley		1869	?	0-4-0	
225	Gonic					0-4-0	Scrap B & M 1886
225	Gonic	Mason	#739	1886	16x24"	0-4-0	Renumbered 71

7	Geo. T. Rice	Taunton L W	#321	1864	16x24"	4-4-0	
226	Sandown					4-4-0	Scrap B & M 1886
226	Sandown	Portland	#564	1887	18x24"	4-4-0	Renumbered 853
10	Salisbury	Taunton L W	#275	1860	16x24"	4-4-0	
227	Hubbard					4-4-0	Scrap B & M 1902
11	Gov. Lincoln	Taunton L W	#374	1866	16x24"	4-4-0	
228	Windham					4-4-0	Scrap B & M 1903
12	T. H. Kinnicut	Taunton L W	#428	1868	16x22"	4-4-0	
229	Barrington					4-4-0	Scrap B & M 1889
229	Not Named	Manchester		1892	17x24"	4-4-0	Renumbered 788
14	Jacob Fisher	Rhode Island	#252	1871	16x24"	2-6-0	
230	Epping					2-6-0	Scrap B & M 1887
230	Not Named	Portland	#565	1887	18x24"	4-4-0	Scrap B & M 1908
15	Thomas Chase	Rhode Island	#253	1871	16x24"	2-6-0	
231	Fremont					2-6-0	Scrap B & M 1889
231	Not Named	Portland	#578	1888	18x24"	4-4-0	Changed from #219; Renumbered 803.
3	Groton (2d)	Rhode Island	#378	1872	17x24"	2-6-0	
232	Hollis					2-6-0	Scrap B & M 1888
232	Hollis	Manchester		1889	18x24"	4-6-0	Renumbered 1900
18	Rochester	Manchester	#658	1874	16x22"	4-4-0	
233	Sterling					4-4-0	Scrap B & M 1909
19	Portland	Manchester	#659	1874	16x22"	4-4-0	
234	Oakdale					4-4-0	Reb. & Renumbered 750.
20	Gonic	Manchester	#660	1874	17x24"	4-4-0	
235	Boylston					4-4-0	Scrap B & M 1909
21	Hudson	Manchester	#661	1874	17x24"	4-4-0	
236	Groton					4-4-0	Reb. & Renumbered 751
16	Hollis	Hinkley		1872	15x24"	0-4-0	
237	Greendale					0-4-0	Scrap B & M 1896
2	Nashua (2d)	Portland	#388	1881	17x24"	4-4-0	
238	Hudson					4-4-0	Renumbered 618
1	Lancaster (2d)	?				0-4-0	
239	Quinsigamond					0-4-0	Scrap B & M 1891
239	Not Named	Manchester		1892	17x24"	0-6-0	Renumbered 116
9	Quinsigamond (2d)	W N & R R R		1884	16x24"	?	
240	Hampstead					?	Scrap B & M 1898

13	C S Turner	Rhode Island	113	1869	18x22″	4-4-0	
241	Lancaster Reb.	Portland		1883	18x22″	4-4-0	Renumbered 802
24	Not Named (2d)	Rhode Island	1531	1885	17x24″	4-4-0	
242	Clinton					4-4-0	Renumbered 624
4	Not Named (2d)	Rhode Island	1530	1885	17x24″	4-4-0	
243	Nashua					4-4-0	Scrap B & M 1908
22	Not Named	Rhode Island	1528	1885	18x24″	2-6-0	
244	Samson					2-6-0	Renumbered 1300
23	Not Named	Rhode Island	1529	1885	18x24″	2-6-0	
245	Goliath					2-6-0	Renumbered 1301

In connection with the roster of Boston & Maine R. R. locomotives that appeared in BULLETIN #26, it has been a source of pleasure to hear from our members and know that they are interested to have this work of Mr. Yeaton appear in our bulletins. I am listing the corrections as I have received them as they will be of interest to our members. They are as follows:

1	Dragon	B & M R R	1884	0-4-0	15x22″ Sold to Woodstock Ry.
2	Portland	Hinkley & Drury	1843	4-2-0	11½x20″ Scrap B & M 1884
6	Swampscot	Hinkley & Drury	1848	0-4-0	13½x20″ See Annual Reports
10	New Hampshire	Manchester	1874	0-4-0	15x22″
12	Lawrence	Hinkley & Drury	1847	4-4-0	15x18″ Renamed "Wyoming"
13	Wannalancet	Hinkley	1863	4-4-0	14x20″ Renamed "Stoneham"
19	Hinkley	Hinkley & Drury	1852	4-4-0	15x20″ Renamed "Oak Grove"
29	Newburyport	Manchester	1892	4-4-0	17x24″
32	Ajax	Hinkley	1861	0-4-0	15x24″
46	N C Paul	Rhode Island	1878	4-4-0	13x24″
53	Mercury	Hinkley	1872	0-4-0	16x22″
66	Decatur	?	?	0-4-0	
78	Eagle	Manchester	1879	0-4-0	15x22″
79	Bradford	Manchester	1879	0-4-0	15x22″
82	Everett	stated to have been rebuilt to a 4-4-0 before being scrapped.			
96	Rollingsford	Rhode Island	1884	4-4-0	17x24″

I am very glad to have these corrections, mostly in the matter of wheel arrangement, and am passing them to our members for their information.

In the Report of the Eastern R. R. 1883-84, under the title of "Historical Description of Road", we find the following table which may be of interest as it indicates the dates certain portions of the road were either opened for traffic or acquired.

			Miles	
Aug.	27, 1838	East Boston to Salem ...	13.00	E R R Main Line
Dec.	10, 1839	Salem to Marblehead ...	3.52	Marblehead Br.
Dec.	16, 1839	Salem to Ipswich	12.00	E R R Main Line
Nov.	9, 1840	Ipswich to State Line ...	13.20	E R R Main Line

Dec.	31, 1840	State Line to Portsmouth	16.08	E R R Main Line
Dec.	1, 1847	Beverly to Gloucester....	13.55	Gloucester Br.
Jan.	1, 1848	Salisbury to Amesbury ..	3.79	Salisbury Br.
Apr.	1, 1854	Revere to Boston	6.72	E R R Main Line
Feb.	1, 1853	West Lynn to Everett ..	9.55	Saugus Br.
Nov.	4, 1861	Gloucester to Rockport ..	3.39	Gloucester Br.
	1847	Salem to Peabody	2.00	Lawrence Br.
	1848	Peabody to Lawrence ...	17.90	Lawrence Br.
Aug.	1871	Wenham to Asbury Grove	1.06	Asbury Grove Br.
Aug.	1872	Newburyport City R R...	2.24	Newburyport City R R
May	1872	Wenham to Essex	5.48	Essex Br.
Nov.	21, 1842	Portsmouth to Portland..	50.76	P S & P R R
Feb.	5, 1855	Great Falls to South Berwick		P G F & C R R
		Conway Jct. to North Conway ..... (Total length of Conway road)	71.37	P G F & C R R
Aug.	19, 1872	Wolfboro Branch	12.08	Wolfboro Br.
Sept.	1, 1850	Peabody to Wakefield ..	8.12	South Reading Br.
Feb.	1, 1874	Portsmouth to Dover ...	10.88	P & D R R
Oct.	21, 1873	Marblehead to Swampscott	3.96	Swampscott Br.
Oct.	1, 1874	Somerville to Charlestown	1.09	E R R Frt. tracks
July	2, 1881	Oak Is. Jct to Saugus River Jct.....	1.78	Chelsea Beach R R
Total Miles Operated Sept. 30, 1884			284.95	

(To be continued)

At the meeting of the Directors of this Society held on May 15th in the Baker Library, Boston, after fitting resolutions had been passed upon the death of our former Secretary, Charles C. Eaton, Mr. Warren Jacobs was unanimously elected Secretary of this Society for the balance of the year.

Railway & Locomotive Historical Society's Negatives

3¼x4¼

#22	Central R. R. of New Jersey	#	9	0-6-0,	Brooks 1902
23	"		86	0-6-0,	Brooks 1905
24	"		110	0-6-0,	A L Co. 1918
25	"		113	0-6-0,	A L Co. 1923
26	"		137	0-6-0,	Baldwin 1918
27	"		167	4-6-0,	Brooks 1902
28	"		175	4-6-0,	Brooks 1906
29	"		221	2-6-2,	Baldwin 1904, suburban engine
30	"		230	4-6-4,	Baldwin, 1923, suburban engine
31	"		278	0-8-0,	Baldwin 1914
32	"		310	0-8-0,	Baldwin 1927
33	"		371	2-6-0,	C R R of N J 1907
34	"		411	4-6-0,	Baldwin 1893
35	"		437	4-8-0,	Brooks 1899
36	"		591	4-4-2,	Brooks 1901
37	"		594	4-4-2,	Brooks 1901
38	"		611	4-6-0,	Brooks 1902
39	"		655	2-8-0,	Brooks 1903
40	"		768	4-6-0,	Baldwin 1912
41	"		782	4-6-0,	Baldwin 1912
42	"		800	4-4-2,	P & R 1912
43	"		805	4-4-2,	P & R 1912
44	"		814	4-6-2,	Baldwin 1930
45	"		825	4-6-2,	Baldwin 1918
46	"		826	4-6-2,	Baldwin 1923
47	"		832	4-6-2,	Baldwin 1928
48	"		831	4-6-2,	on "Blue Comet".
49	"		855	2-8-2,	A L Co. 1918
50	"		917	2-8-2,	Baldwin 1925
51	Baltimore & Ohio	#	5307—	"Pres. Harrison",	4-6-2, Baldwin 1927
52	"		5310—	"Pres. Taylor",	4-6-2, Baldwin 1927
53	"		5316—	"Pres. Grant",	4-6-2, Baldwin 1927
54	"		4605—	2-8-2, Baldwin 1922-23	
55	"		4619	2-8-2, Baldwin 1922-23	
56	Philadelphia & Reading		108	4-6-2, P & R 1916	
57	"		109	4-6-2, P & R 1916	
58	"		113	4-6-2, P & R 1917	
59	"		347	4-4-2, P & R 1906	
60	"		1709	2-8-2, Baldwin 1915	

Prints of the above may be procured from J. W. MERRILL, 40 Broad St., Boston, Massachusetts. Price 10c each to our members.

Locomotives of the Grand Trunk Railway

SUPPLEMENTARY NOTES TO THE STORY IN BULLETIN 25

By JOHN LOYE

SUBSEQUENT to the publication of our story of the locomotives of the Grand Trunk Railway in BULLETIN 25, we were enabled to bring to light and definitely establish certain facts of importance in Canadian locomotive history. We readily admit that we still have to grope our way in the maze of uncertain data before we can lay hands on the truth and in this we allow that much of our success is due to the guidance of others. We may write with the semblance of authority, but we must be ever watchful of our statements and be prepared to supplement, rectify or contradict them so that the truth shall be obtained.

THE "JOSEPHINE"

This famous and oft-recalled engine, for whose picture we are indebted to Mr. C. W. McMullen of Toronto, fully earned and deserved her fame and renown. She was the highest expression of American locomotive design in the year of her production, 1853, and for years thereafter was the peeress of the Canadian passenger engines. It was never known how fast the "Josephine" could travel, but she could rise to 60 miles per hour with consummate ease. She was really too fast for her line, the Ontario, Simcoe & Huron, and no engine was ever held in higher esteem by the railway men than this magnificent racer with her six-foot drivers.

Who built the "Josephine"? This has been a vexed question. It has been stated by various parties that she was a rebuilt Portland, that she was an English-built engine or that she was built at Paterson, N. J. John Duncan, in the *Canadian National Railways Magazine*, January, 1925, states she was "one of eleven engines either built in Toronto by James Goode, or in Paterson, N. J." Dendy Marshall in "Two Essays on Early Locomotive History", cites Sinclair as saying the engine was English, but alternately quotes Duncan, as above, and leaves the word "Builders" to stand with an interrogation.

We were recently favored with the loan of Mr. McMullen's fine original photograph of the "Josephine", and advised by him to examine the door of the smoke-chamber under a magnifying glass. Under powerful lenses and strong light we resolved,

New Jersey Locomotive & Machine
Paterson, N. J.
J. Brandt & Co.

The J. Brandt shown in the cast iron lettering on the boiler front was for John Brandt, Superintendent and a part owner of the works

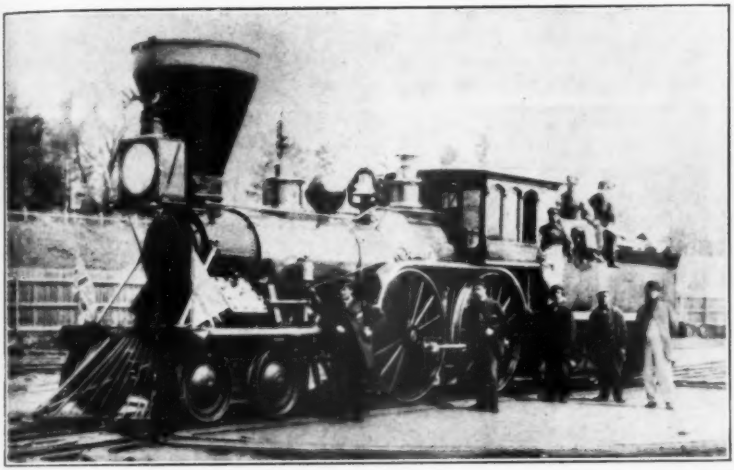


FIG. I
"The Josephine" The fastest and finest of her day on the Ontario, Simcoe & Huron Ry.

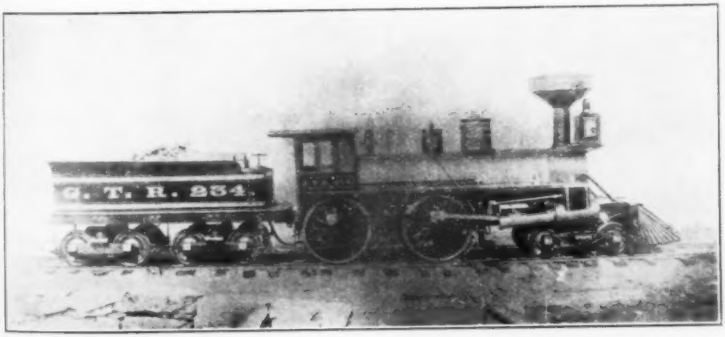


FIG. II
G. T. R. No. 234

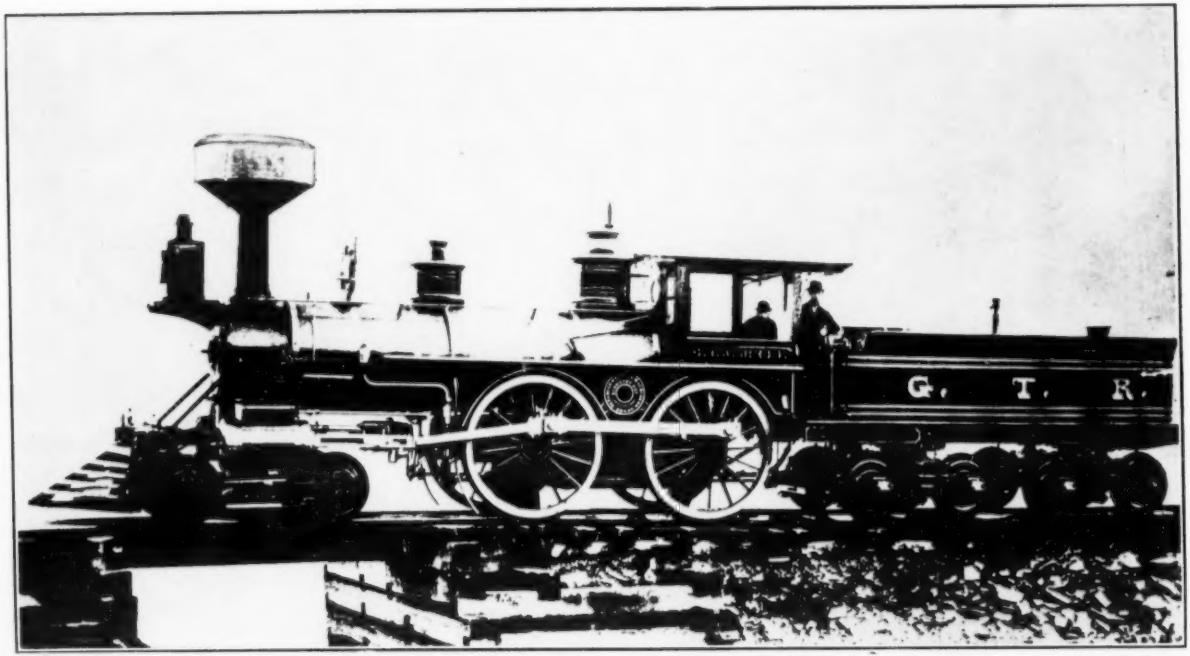


FIG. III

G. T. R. No. 286

mentioned. Later he opened his own works at Lancaster, Pennsylvania, but on account of the death of Mr. Brandt the enterprise was short lived, closing about the end of the Civil War. The "Brandt engines", as they were called, were a well proportioned and well built locomotive and they deserve a place with those that came from other works such as Rogers, McQueen, Mason, etc.

With all doubt removed, it is to our satisfaction that the origin of the "Josephine" is thus definitely established. She was one of several Paterson engines built for the Ontario, Simcoe & Huron R. R., but the only one with high wheels, being essentially a passenger engine, and an extraordinarily well balanced and smooth running machine. She was broken up about 1880. The other engines presumed to have come from the New Jersey Locomotive Works were Nos. 4, 5, 7 and 8, whose drivers were five feet in diameter, cylinders 17x20" and inside connected.

THE NEILSON ENGINES

In 1868, Neilson & Co. of Glasgow, Scotland, built twenty-five locomotives for the Grand Trunk Ry. They were of thirty-four tons (American) weight, with 16x26" cylinders and drivers 5'-1" in diameter.

In BULLETIN 14, in the article—"Grand Trunk Railway of Canada", by the late Charles S. Given, there appeared a picture of a locomotive on page 17, entitled—"Grand Trunk No. 234. Supposed to be a rebuilt Portland Company locomotive." This picture was again shown in BULLETIN 25, as one of the illustrations in our own story, "Locomotives of the Grand Trunk Railway", Figure V and entitled, "G. T. R. Engine No. 234. A Portland of the latter 50's as rebuilt at the change of gauge in 1873." For the purpose of direct comparison we again reproduce this picture.

Subsequent to the appearance of our story in BULLETIN 25, a fellow member, Mr. W. M. Spriggs, placed in my hands a photograph of one of the twenty-five engines supplied by Neilson & Co. to the Grand Trunk Ry. in 1868. Almost simultaneously there came to our notice the same picture in Cassell's "Railways of the World", page 280, entitled—"American Design of Locomotive, (4-4-0), built by the North British Locomotive Co., for the Nova Scotia Railways, 1868" by Fred M. Talbot.

It may be that Mr. Talbot has confounded this engine with those of the same year, 1868, built for the Windsor & Annapolis Ry. of Nova Scotia by Fox, Walker & Co. of Bristol. In any case, the engine shown by Mr. Talbot is the same one which illustrates those built by Neilsons for the Grand Trunk Ry., and, insofar as we have been able to ascertain, no similar engines were built by them for any Nova Scotia line. The North British Locomotive Co. is the successor of Neilson & Co. It comprises several well known firms, the Neilsons, Sharp, Stewart & Co., and Dubs & Co. The last named firm built engines for the Intercolonial and Canadian Pacific in the period, 1871 to 1882, and this fact may have confused Mr. Talbot. The following list is from the North British Locomotive Co., and furnished by Mr. W. M. Spriggs:

1868	G. T. R.	25	4-4-0	Neilson & Co.
1871	I. C. R.	15	4-4-0	Dubs & Co.
1881	I. C. R.	10	4-4-0	Dubs & Co.
1882	C. P. R.	30	4-4-0	Dubs & Co.

We cull the following from "The British Steam Locomotive" by the late E. L. Ahrons, page 183:

"In 1868 Neilson & Co., built 25 4-4-0 engines for the Grand Trunk Railway, Canada—at that time of 5 ft. 6 in. gauge—to the drawings and templates provided by R. Eaton, chief locomotive superintendent of the railway. They were American in all essentials except, that shallow plate frames instead of bar frames were employed, and the firebox casings were flush with the barrel. The bogies were of the trussed diamond truck pattern without side play with no other springs beyond a block of india rubber on the flat center plate and two small rubber springs at the sides of the transverse beam. The bogie wheels were of chilled cast iron; the firebox of wrought iron, but the tubes of brass. The chimney was of the flattened 'diamond stack' type, with spark arresting top 6 feet in diameter. The weight-bar shaft was counterbalanced by a coiled spring. These engines had 16x26" cylinders and 5 feet 1 inch coupled wheels."

The Neilson engines were known in their time on the Grand Trunk Railway as the "Scotch Engines", and, like the Birkenheads, formed in themselves a family group apart from their American cousins. Their peculiar smoke stacks were nicknamed "champagne cups", and had the widest spread of any on the Grand Trunk system. Their domes were cased in staved wood bound with hoops of brass, like some of the early Portlands, a feature that, no doubt, led Mr. Given to suppose that No. 234 was one of their engines rebuilt at a later date. Their bells swung between two steam pipes close to the cab and their tenders were rimmed with a covered flare at the top, a style which characterized all subsequent tenders turned out of the G. T. R. shops up to 1896.

The records of the Grand Trunk do not confirm the identity of No. 234 as a Neilson, however. A shuffling of numbers has served to complicate lists, it is true, but in the case of the Neilsons they are tabulated as from 256 to 280 inclusive; an order of 25 engines delivered to the G. T. R. covering the period from July, 1868 to January, 1869. We find two engines numbered 234, one a Mason dated 1864 and the other a Portland dated 1873. In their respective shop lists these engines are likewise numbered 234.

Thus for the present we are unable to explain the presence of the number, 234, on a Neilson engine. However, this complication cannot affect the evidence that the engine No. 234 that appeared in BULLETIN 14 was a Neilson. A comparison of the pictures shown herewith places the matter beyond all cavil.

We are pleased to feel that we may hereby make our membership more familiar with this distinctive and interesting group of locomotives from over the seas, which, like their English brethren, the Birkenheads of the preceding decade, came to make railroad history and leave their name distinguished of themselves in the annals of the Grand Trunk Railway of Canada.

GRAND TRUNK RY. No. 286

In BULLETIN No. 25, Figure XIII depicted a fine specimen of a passenger engine built in 1870 by the Canadian Engine & Machinery Works of Kingston, Ontario. The photograph from which the reproduction was made was obtained from the Publicity Department of the Canadian National Railways. The descriptive note attached gave the number as 233.

Subsequent to the publication of BULLETIN 25, we were enabled to examine the original photograph of this locomotive in the possession of Mr. McMullen, wherein the numerals are clearly shown as 286. This was verified in the records of the C. N. R. The engine was received from the C. E. & M. Co., Kingston, in November, 1870. It was altered to standard gauge in 1873 and in July, 1881 was sold to the Canadian Pacific Ry. for $6600.00.

In the '70's and '80's many G. T. R. engines passed to new lines that opened in that period. The Quebec, Montreal, Ottawa & Occidental, the South Eastern and other lesser lines in Quebec Province acquired engines from the G. T. R. The organization of the Canadian Pacific fifty years ago involved the Q. M. O. & O., and later the South Eastern and thus, with the additional motive power bought on its own account we find a considerable number of ex-G. T. R. engines in the early service of the C. P. R.

Up to thirty years ago one could find old Portlands, Amoskeags and Birkenheads, which had been altered at the change of gauge in 1873 and 1874, doing service on spur lines in eastern Quebec and northern New Brunswick and in the timber regions on the north shore of the Ottawa River.

STEPHENSON ENGINES OF 1856

In 1856 Robert Stephenson & Co., according to their own records and filed drawings, built three locomotives for the Canadian Grand Trunk Railway. They were of the 2-4-0 wheel arrangement and were shop numbers 989, 990 and 991. We find a reproduced working drawing on page 111 of "Two Essays on Early Locomotive History", by C. F. Dendy Marshall. No weights or details are given, but according to scale, as appended, the two leading wheels were 4′-0″ diameter and the two pairs of coupled driving wheels were 6′-0″. These engines were inside connected and designed for passenger service.

No mention is made of these three Stephenson engines in any available records of the Grand Trunk Ry. They do not appear in the complete locomotive list of 1859. We can find no evidence to show that they were ever delivered to the Grand Trunk Ry. Enquiries have been made of the Stephenson Company as to the possibility of these engines having been built to the order of another Canadian line—the Great Western, but the Company's records, they say, specify the Grand Trunk Railway.

For the time being we must content ourselves with deductions and surmises without being able to advance a definite conclusion in the matter. These engines were built and shipped to Canada. They were not lost at sea. Somebody received them!

Some time in our life we heard it said, or perhaps we read it, that the Stephensons built engines for the Great Western Railway; engines whose design furnished the pattern and influenced the character of the locomotives subsequently built in the Great Western Shops at Hamilton. This idea is only a child of hearsay playing in our memory. The records of the Great Western Railway are not available to us, if they exist at all, to verify this likely supposition.

But there are more tangible evidences to strengthen the conjecture that these Stephenson engines found their way to the Great Western. Aside from the physical features characterizing that Company's locomotives built at Hamilton, notably the steam domes which were replicas of that shown on the engine depicted in "Two Essays", we have a certain passenger locomotive, one of several, which we illustrate herewith.

A close comparative scrutiny of the "Prospero" and the 2-4-0 engine shown in Mr. Dendy Marshall's work reveals corresponding features enough in themselves to prove them to be one and the same. In their relative position, design and proportion, the fundamental parts are exactly the same, while the differences can be shown to be superficial and not integral. In the "Prospero" we find that the boiler, dome, driving wheels, coupling rods, leading wheels and their springs, the injector head and pilot framing are exactly the same as those of the Stephenson engine.

The main differences to be noted in the "Prospero" are as follows: the funnel which is a characteristic of the Great Western and may have been substituted for the original one from Stephenson; the running board over the drivers which may have replaced the original wheel-casing to allow accessibility to the wheels and inner parts; the bell which may have been removed since the Great Western, following the English ways, did not have bells on its engines; the cab, steam pipe, sand-box, headlight and cowcatcher, all of which would have been added in the usual course. We find a difference in the frontal contour of the smoke arch, however, that of the Stephenson showing a casing like that of the Birkenheads. But in this it is at variance with its side elevation which shows the spring over the leading wheel right in the way of the casing as shown in the front. This discrepancy is a fault in the drafting. The true contour of the smoke arch is shown in the cross section and this corresponds to that of the "Prospero". The Stephenson drawing shows no tender. The tender of the "Prospero" is six-wheeled with a rigid framing; a typical English tender.

Thus we assume and, so assuming, submit that the three Stephenson engines of 1856, built for the Grand Trunk went to the Great Western Railway instead. In this assumption we are not alone. Fellow members, W. M. Spriggs of St. Anne de Bellevue, P. Q. and Robert C. Schmid of New York City, have written to us to express the same view of the "Prospero" and its origin and its co-identity with those three mysterious Stephensons of 1856. Mr. Robert R. Brown is of the opinion that the draftsman at the Stephenson works confused the Grand Trunk with the Great Western, which is possible also.

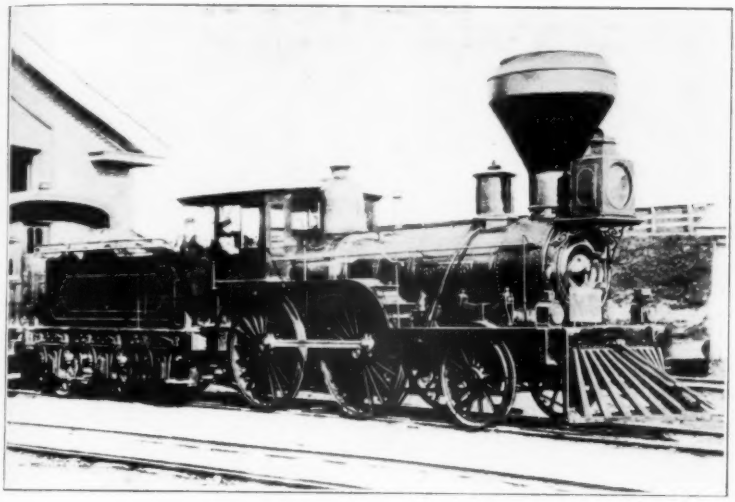


FIG. IV

THE "PROSPERO"

Great Western Railway of Canada, about 1865. Supposed to be either the original, or a replica, of one of the three locomotives built in 1856 by Robt. Stephenson & Co. for the G. T. R.
From the files of the Canadian National Rys., per W. S. Thomson, Director of Publicity.

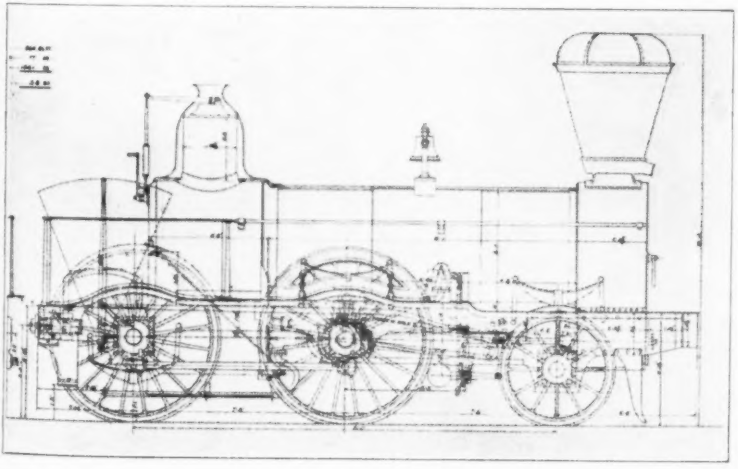


FIG. V

2-4-0 Passenger Locomotive by Robt. Stephenson & Co. for the Canadian Grand Trunk Railway, 1856.
Reproduced from "Two Essays on Early Locomotive History," by C. F. Dendy Marshall.

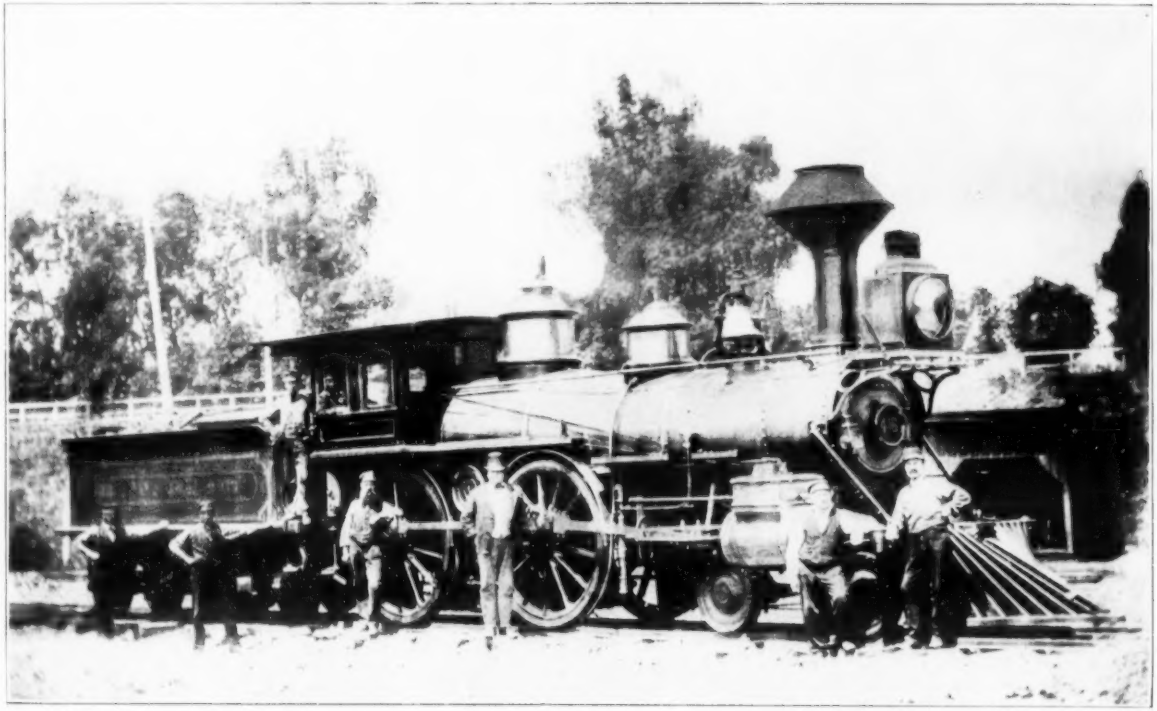


FIG. VI

THE "EARTHQUAKE"

A famous Blood engine of the Grand Trunk. Built at Manchester Locomotive Works, Manchester, N. H., 1874.

From the collection of Mr. C. W. McMullen, Toronto

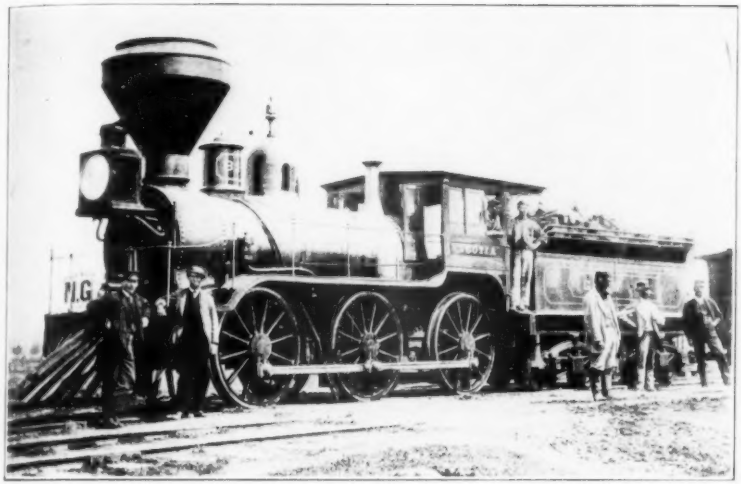


FIG. VII

THE "SCOTIA"

Great Western Railway of Canada. Built at the Company's Shops, Hamilton, Ont., 1859-60.

From the collection of Mr. C. W. McMullen, Toronto.

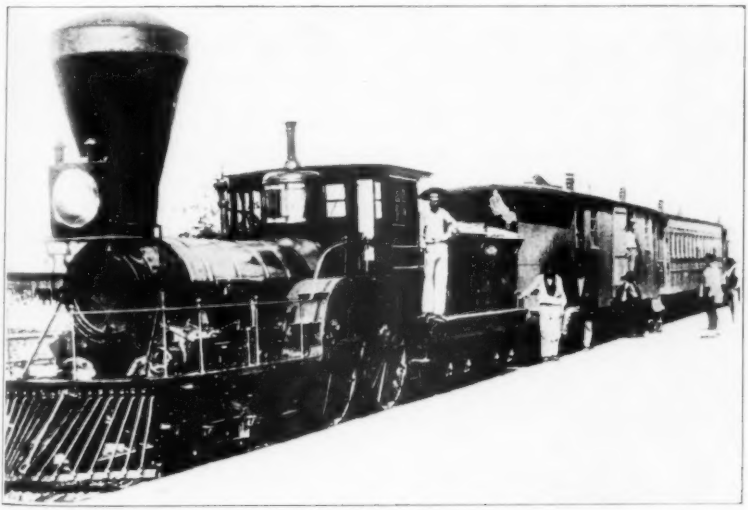


FIG. VIII

THE "ESSEX"

Engine No. 15, the "Essex," on the Great Western Railway of Canada, 1856. A famous engine of her line. Built at the Lowell Machine Shop, Lowell, Mass., 1853. Cyl., 14"x22"; drivers, 66"; inside connected. See Bulletin 7, page 49.

Courtesy of Mr. R. C. Schmid.

A famous Blood engine of the Grand Trunk. Built at Manchester Locomotive Works, Manchester, N. H., 1874.

FIG. IX

A scene on the Great Western Ry. of Canada nearly sixty years ago.

G. T. R. #39. Built by the G. T. R., 1892. Cyl. 17x22"
Courtesy Arthur Curran.

Strangely enough, there is absence of all reference to these locomotives in the works of J. G. H. Warren and E. L. Ahrons, who might be expected to remark on so notable a contribution to the list of British engines for overseas. Nor do we find any allusion to them by Zerah Colburn or Daniel K. Clark, or others of the limited number of authorities available to us.

Mr. Warren in "A Century of Locomotive Building by Robert Stephenson & Company", Chapter XXIII, page 299, "The Stephenson Locomotive in America, makes no mention of these engines. The omission is striking in view of Mr. Warren's long association with the Stephenson Company and his most comprehensive knowledge of locomotive history in general.

The late E. L. Ahrons in "The British Steam Railway Locomotive" Chapter XI, page 137, "British Locomotives for Abroad", does not mention these three Stephensons of 1856. But he does not mention the Birkenheads, either, although his work is regarded as the most comprehensive of its kind.

Mr. Dendy Marshall in his "Two Essays" briefly comments, "Three fine 2-4-0 engines were built for the Grand Trunk Railway in 1856 by Stephenson & Co. (maker's numbers 989-991), one of which is shown in Fig. 23." The side elevation of said Fig. 23 is reproduced herewith. It will be found in Chapter II, page 108, entitled "Canada", in "Two Essays in Early Locomotive History," bearing the annotation, "Grand Trunk Engines—Block lent by Robert Stephenson & Co., Ltd."

And so, having made an exposition of all our exhibits in the case, we must leave this matter of the Grand Trunk Railway engines built by Stephensons quite unexplained. But the circumstantial evidence in hand points strongly to the truth of the conditional verdict rendered in our own behalf and in our own opinion, and we but wait eventual confirmation of the same.

GRAND TRUNK RY. #416—The "Earthquake"

As with the picture of the "Josephine", we are indebted to Mr. C. W. McMullen for that of G. T. R. #416. She was one of several Manchester engines that came with the change of gauge; a "Blood Engine", so termed because Aretus Blood, Agent of the Manchester Works, produced engines which, like Eddy's "clocks", became renowned for their power and efficiency. This redoubtable locomotive was built in 1874, and was, by all accounts, the peer of all of the fine Manchester breed that came to serve on the railways of Canada. She was an example of that mechanical phenomena appearing in all engine construction, especialy in locomotives. You may build twenty from the same plan and they may be all identical, but one will excell the others in every respect. Such a one was No. 416.

In the records of the Canadian National Railway we find this engine listed and also a marginal note—"Earthquake". Mr. McMullen speaks of No. 416 as "a Blood engine, bright silver plated; modern in every respect; a beautiful engine." It has been stated, he says, that she was

made a present to the Grand Trunk Railway by the Manchester Works, in the hope that it would influence the G. T. R. in placing prospective orders. We have also heard several veterans of the G. T. R. service speak of the "Earthquake" as one of the regular engines of that line.

This engine should not be confused with another engine built by the Manchester people about this time. Wishing to be precise in the matter we had Mr. Fisher inquire of the American Locomotive Company, and the reply was:—

> "We would advise you that we have gone over our records and find that Manchester shipped on March 25, 1873, to the New York, Providence & Boston R. R., a locomotive named "Earthquake", bearing shop number 542. It also shows that on February 19, 1874, they shipped a locomotive to the Grand Trunk Railroad; a locomotive known as "Earthquake", bearing shop number 643 and road number 416."

No doubt Mr. McMullen is correct when he surmises this engine was a gift child of the Manchester Works to the Grand Trunk Railway at the change of gauge when new orders were to be expected. She was followed by sixty other engines that came from the same builder between 1873 and 1874. We submit that our story of the Grand Trunk motive power in BULLETIN #25 was incomplete without mention being made of this famous engine and her contemporaries.

ENGINES OF THE OLD GREAT WESTERN RY.

Although the locomotives of the old Great Western may not, appropriately, come under the head of the Grand Trunk, yet, like those of the Ontario, Simcoe & Huron, many of them eventually finished their days bearing the initials of the Grand Trunk Railway by reason of the latter acquiring the original lines. Furthermore, the engines of the Great Western were quite akin to those of the Grand Trunk since the man whose design gave them their distinctive character, Richard Eaton, came to the Point St. Charles Shops in 1863, and for nine subsequent years infused his ideas into the design of the Grand Trunk locomotives.

The "Scotia" was a typical product of the Hamilton Shops, built in 1859, and, according to W. M. Spriggs, one of six six-wheeled freight engines, another of which was the "George Stephenson." The "Scotia" is credited with having a steel boiler—the first in Canada.

The sign, "N. G." on the pilot denotes the presence of narrow gauge cars in the train, the Great Western having a third rail to 4'-8½" throughout its main system, which was of 5'-6" gauge.

Like those of the Grand Trunk, the engines of the Great Western were varied in design and a number of them were of British manufacture. They came from Slaughter, Gunning & Co. of Bristol, from Fairbairns and also from Stephenson, it would appear. The first motive power on the line came from the Lowell Machine Shops. In 1851 two engines, according to the records, the "Canada" and "Niagara", were built for the Great Western. These engines were not put into commis-

sion until late in the year of 1852 or 1853. The first locomotive in Upper Canada, (Ontario), the "Lady Elgin", came to the Ontario, Simcoe & Huron, (Toronto), in the month of June of the year 1853. The two Lowell engines did the construction work of the Great Western, which started to operate partially in 1853 but was not completed until 1858. In 1853 eight more engines from the Lowell Machine Shops were delivered to the Great Western, namely:—the "London", "Hamilton", "Essex", "Kent", "Elgin", "Norfolk", "Brant" and "Wentworth". We are not aware of any other Canadian railway ever having Lowell engines.

The "Essex" is a fine example of a Lowell engine of the early fifties. The plate shown on page 49 of BULLETIN No. 7 is of the same design save for a difference in the shape of the stack. In looking at the bewhiskered engineer on the foot-plate of this quaint old Lowell engine, and the other folks down the platform by the low roofed cars, we cannot fail to be impressed by that wonderful medium of scenic preservation, the photograph, that now enables us to look upon those actual scenes in the light of the world of eighty years ago.

The origin of the Great Western Railway of Canada is found in the charter issued to the London & Gore (Hamilton) Railway, in 1834. The charter lapsed but was revived in 1845 only to lapse again until an English corporation took hold of it in 1847. It operated in south western Ontario, from Toronto to Windsor. It was absorbed by the Grand Trunk in 1882.

The author's thanks is due to Mr. W. F. Connal, Mechanical Engineer and his assistant, Mr. Cuthbert, of the Canadian National Railways. To Messrs. C. W. McMullen, W. M. Spriggs, Robert C. Schmid and Arthur Curran, the author wishes to thank them for their information and illustrations for without their generous assistance he would have been unable to produce these notes.

We must still leave unnoticed many locally famous engines, whose pedigrees and achievements are preserved in the memory of the surviving veterans who served them in the days when their cylinders shined like new. Their names, or their nick-names, have come down even to those who never beheld them, like "Billy-on-time" in Point St. Charles, or "Le petit St. Lambert". The locomotives of the olden days were conspicuous objects in town and country and each one had an individuality and a history of its own.

EDITOR'S NOTE: The appearance of the bell on the deck of the Great Western Railway locomotive was an early attempt at an automatic bell-ringer. The bell clapper was attached to the eccentries of the locomotive. When the locomotive started—the bell began to ring—just when it was needed. As long as the locomotive continued to run—the bell rang—just when it was needed; but the faster the locomotive ran the faster the bell rang and thereby ended this automatic bell ringer but not until many an engine on the Great Western and many new engines purchased had been rigged in this fashion.

A Wooden Railway of Seventy Years Ago

By Robert R. Brown

ONE of the most curious, though not by any means one of the most ancient, ancestors of the Canadian National Railways was the Quebec and Gosford Wooden Railway. It was the first railway to run trains within the limits of Quebec city and, while it was not very successful, it was an interesting example of how the railway promoters of that period tried to reduce the cost of construction. About the year 1868 a railway contractor, named J. B. Hulbert, came to Quebec from the United States and proposed building, in various parts of the province, a number of cheaply-built colonization railways using wooden rails of a type he had invented. He succeeded in interesting several prominent men who induced the Provincial Government to pass an Act, in 1869, to encourage the construction of railways of this kind. This Statute of 1869 guaranteed, for a period of twenty years, the interest at 3% on the cost of the railways, up to $5,000. per mile and completed on or before July 1st, 1872, and also the same interest on the cost of all bridges exceeding 50 yards in length.

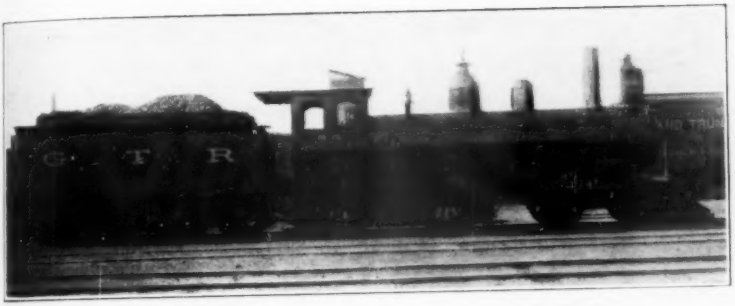
Altogether six companies were incorporated to build wooden railways of the Hulbert type and to benefit by this subsidy:

The Quebec and Gosford Railway was started first and 26 miles were completed in November 1870.

The Richelieu, Drummond and Arthabasca Railway, which built a line from Sorel to Drummondville, a distance of about 50 miles, and ran trains between those towns in the summer of 1872. It was to have been extended to Richmond, to connect with the Grand Trunk Railway there but, in 1873, it was bought by the South Eastern Railway, rebuilt with iron rails, and extended through Acton Vale, Waterloo, Foster and Knowlton to connect with the Main Line of the South Eastern Railway at Enlaugra. Later on, about 1883, the original section, between Sorel and Drummondville, was abandoned and the rails taken up but a few years later the Quebec, Montreal and Southern Railway made use of part of this old right of way, between Sorel and Yamaska, and this section now forms part of the recently acquired Canadian National line from St. Lambert to Sorel, Nicolet and Fortierville.

The Levis and Kennebec Railway and the Sherbrooke, Eastern Townships and Kennebec Railway started grading about the same time and prepared a quantity of wooden rails but before the work had advanced very far it was seen that the Hulbert rail did not come up to expectations and iron rails were used instead. These two railways now form part of the Quebec Central Railway.

The St. Francis and Kennebec and the Three Rivers and Piles Railways were also to have been built with wooden rails but the work was delayed and when finally built iron rails were used.



G. T. R. #86. Built by the G. T. R., 1893. Cyl. 18x24"

Courtesy Arthur Curran

G. T. R. #572. Built by the G. T. R., 1891. Cyl. 18x26"

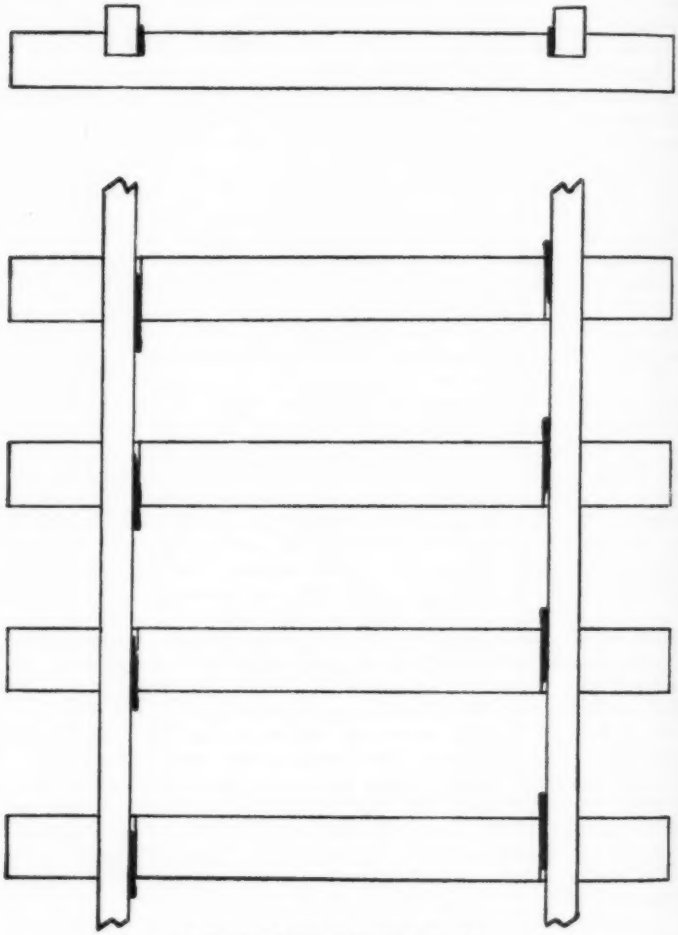
Courtesy Arthur Curran

The Hulbert wooden rail was very simple and in a milder climate might have been very serviceable for light railways. The ties were much heavier and thicker than those generally used and on the top surface of each one were two square notches about three inches deep for the rails to set in. The rails were strips of seasoned maple, fourteen feet long, four inches wide and seven inches high, and rested in the notches of the seven ties, over which each rail extended. The ends of the rails were cut diagonally and fitted together as a scarf or lap joint; the joints always being set in the notch of a tie. No nails or metal fastenings of any kind were used; the rails were held in place by wooden wedges driven in between the side of the rail and the side of the notch in the tie, in much the same way as the English bull-headed rails are held tight in their chairs with wooden keys or wedges. Naturally the wooden rails could not be bent very much so the track was rather rough and uneven at curves but it was thought that it would be perfectly safe as long as the wood remained sound; the rails were expected to last about five or six years and, considering the cost, were to be very economical. Experience proved, however, that they had to be reversed or replaced frequently, so large quantities of new rails were piled at short intervals along the track and, probably, the engineer's most useful tool was his axe.

Mr. Hulbert was given the contract for the construction of the road and he commenced the work in September 1869. As all the lumber for the railway was cut in a temporary saw mill away out in the woods, the work was started at the outer end and the line was built in towards the city. It was started in a lumbering country north of Lake St. Joseph, crossed the Jacques Cartier River near the Valcartier Military Camp, ran east to Loretteville and then followed the St. Charles River in to the city. It was to have been run through the streets of Lower Town to the Palais wharf, near the present Palais station, but lack of funds prevented this and the terminus was a mile and a half away in the middle of, what was then, the St. Sauveur bog, about where Napoleon and Bayard Streets now intersect. To save the expense of costly fills and cuttings, several miles of the line, especially in the valley of the St. Charles River, was built on low trestle work. The biggest undertaking was the bridge built over the Jacques Cartier River, near Valcartier, at a cost of $12,000. There were two wooden spans, sixty feet above the river, one being ninety-seven feet long and the other seventy-nine feet; the north approach to the bridge was a wooden trestle, 1250 feet long, and while on it the train was high above the tree-tops. As the railway had to climb about 600 feet in twenty-six miles some of the grades were severe, one long one just east of Loretteville being 250 feet to the mile (4.7%) but as it was down hill for the loaded trains, it did not present serious difficulty.

A small 4-4-0 type locomotive, named the "Jacques Cartier", was ordered from the Rhode Island Locomotive Works and it arrived at Quebec on June 23rd, 1870; the cost, delivered to the railway, being $8,396.47. It had special wheels, broader than would have been used on an ordinary railway, so as to cover the whole breadth of the rail, its cylinders were 14 inches in diameter, the stroke 22 inches, the driving

wheels were 42 inches in diameter and the engine weighed twenty-one tons while the tender weighed an additional seven tons. It was estimated that it would haul about 75% of what the same power would on



A Wooden Railway of Seventy Years Ago
The Hulbert Wooden Rail

an iron railway. In some ways the "Jacques Cartier" was a real curiosity, like other wood burning locomotives it had a huge balloon stack but unlike other locomotives even of that time, it had little or no

cab. The sides of the cab extended upward only about three or four feet and there was no roof, so in cold or wet weather a light wooden frame was put up and covered with canvas.

On Dominion Day 1870, the locomotive was removed from the Palais wharf, placed on the rails of the street railway nearby, steam was gotten up and after several directors and friends had climbed into the tender, the "Jacques Cartier" moved off at a rattling pace and reached the end of the street railway track in a few minutes, after having caused considerable interest or consternation among the residents of the streets through which it passed. From the terminus of the street railway to the "end of wood" of the Gosford Railway, about two miles away then, it was hauled over temporary rails laid along the roads and over the fields.

In March 1870 a contract was awarded to Mr. S. Peters, of Quebec, for the construction of thirty flat cars to cost $310. each. They were to have been completed and delivered by July 15th but the work was delayed by a fire which destroyed Bissett's foundry, where the wheels and other metal parts were being made. Lumber was to be the principal freight carried but to handle more perishable goods one of the flat cars was converted into a box car and as passenger traffic was expected to be an important source of revenue, four other flat cars were converted into luxurious passenger cars at an additional cost of $140.00 each.

By the middle of August the grading was completed and the rails were laid to within a couple of miles of the city, so on the 18th of that month the President, Mr. H. G. Joly, M. P., the Vice President, Mr. P. Garneau, then Mayor of Quebec, many of the shareholders and friends, government officials and representatives of the press met at the St. Louis Hotel and were then driven out to the place where the rails then ended. There they embarked on a train, consisting of the locomotive "Jacques Cartier" and several flat cars, and were run out to the Jacques Cartier River. After inspecting the bridge, which had just been completed, lunch was served in a nearby mill and then the party returned to the city. The train attained a speed of 35 miles per hour at times, the track was found to be quite as smooth and solid as the iron railways of that time and the success of the enterprise seemed assured.

According to the contract the line was to be completed by December 31st, 1870 but the work advanced so rapidly that it was finished six weeks before the time stated and the official opening of the railway took place on Saturday, November 26th, with the usual ceremonies and oratory. A large party met, as before, at the St. Louis Hotel and, as considerable snow had fallen, they were driven to the St. Sauveur station in sleighs. They were then taken for a ride to the end of the line and back but this time in passenger cars.

The total cost of the railway, including the rolling stock, was $140,058.60, or a little more than $5000. per mile, and was raised in the following manner:

Paid up by shareholders on their shares	$ 69,436.40
Paid up stock issued to the contractor	20,110.00
Directors' personal notes, redeemed with Government subsidy	47,405.00
Company's note	2,719.00
Interest	434.45
	$140,104.85

The Government subsidy amounted to $48,171.20 so the Company had but a very small amount left over for Working Capital.

Arrangements were then made with Mr. Hulbert for him to operate the railway and according to the agreement he guaranteed to pay to the shareholders 6% on their investment and, in addition, each shareholder was entitled to one cord of the best fire-wood, at cost, for each $10. share paid up. This "bonus" was rather a mixed blessing as the cost of carting the wood from the railway's wood yard in St. Sauveur to the city made the total cost more than the wood was worth.

During the first few months the railway worked very well and the Provincial Government authorized an extension of the line to Lake St. John. Troubles soon began to develop, however, and in the spring of 1871, when the snow began to melt, many of the rails warped badly, causing the wedges to loosen and fall out. Every rainfall caused many of the rails to warp and it frequently happened that when the leading wheels of the locomotive ran over the joint of the rails, the opposite ends of the two rails would rise up, the wedges fall out, and then the train generally ran off the track. Service was maintained with great difficulty for about a year but finally the track became so useless the line had to be abandoned.

The little locomotive was then stored in a shed, near where the St. Malo shops are now, until about 1881 when the old Gosford Railway became part of the Quebec and Lake St. John Railway and work was started rebuilding the old line and extending it to Chambord. The "Jacques Cartier" was put to work again for a couple of years hauling ballast and work trains and for quite a while was assigned to a ballasting outfit that was trying to fill one of the largest sink holes ever encountered in the building of a railway. While on that service one of the cylinder heads was cracked, many miles from the nearest machine shop, so for several weeks the old engine was running with a temporary cylinder head made of two inch spruce reinforced with strap iron.

While considerable money was lost in the venture and the Hulbert wooden rail proved to be a complete failure, it is interesting to record the manner in which our forefathers sought to cover the province with a network of railways when they lacked the means to build them in the regular way.

SOURCES OF INFORMATION

Railways of Canada, 1870-71 by J. M. & Edw. Trout.
Tackabury's Atlas of Canada—1875.
Rapport du Commissaire des Chemins de fer de la Province de Quebec pour l'annee 1881-82.
Files of the Quebec Chronicle for 1870.
American Locomotive Company.
Also several old-timers who traveled on the railway.

Centenary of First Railway Charter in Upper Canada

By JOHN LOYE

CLOSELY approximating in time the issuance of the charter of the Champlain & St. Lawrence Railroad in Lower Canada, 1832, that of the Cobourg Railway, which was issued later in the same year, marked the initial step in railroad building in Upper Canada.

The Cobourg Railway was an ambitious but abortive enterprise, fostered by the merchants and traders centered in and about Port Cobourg on Lake Ontario. It was expected that the road would bring to their port the business of handling the export produce emanating from the townships about Rice Lake and the Peterboro district and also to handle the import supplies flowing into that region.

Port Cobourg had a close and active trade rival in Port Hope, some twenty miles to the west, and it was to gain ascendency over Port Hope that the people of Cobourg attempted to enlist on the side of their town the new found power of the railroad. The situation was not unlike the London & Gore and several other and premature lines in Upper Canada. The Cobourg Railway could not be realized until years later when confidence had been established in the minds of the investor and the growing country became an attractive and fertile field for the exploitation of capital.

History of the Canadian Railroads

ARRANGED BY JOHN LOYE

1816

IN THIS year we find the first recorded suggestions to build railroads in Canada made by one Thomas Gray in the Quebec newspapers.

1820-1830

On Dec. 1, 1824, the Montreal Gazette advocated the building of the Champlain & St. Lawrence Railway.

In 1828 a mass meeting was held in St. Andrews, N. B., advocating the building of the Quebec & St. Andrews Railway.

In 1829 the first line of rail track was laid from the Albion Mines to the water side. The road was operated by horse power. The same year saw the first suggestions of a railway to the Pacific.

1830-1840

In 1831, Peter Fleming advocated a railway to the western boundary of Upper Canada. In December of this year the charter of the Champlain & St. Lawrence Ry. was drafted.

On Feb. 25, 1832, the Royal Assent was given to the Champlain & St. Lawrence Ry. The charter for the Cobourg Railway was also granted this year. This charter lapsed until 1850 and the road was not opened until 1854 with the assistance of the Government.

In 1834 a charter was issued to the London & Gore Railway. This charter lapsed until 1845 when it was amended to the Great Western Ry. of Canada.

In 1835 a charter was issued to the Erie & Ontario Ry. from Queenstown to Chippewa. Construction was commenced in 1836 and the road, operated by horses, was opened in 1839.

In 1836 a charter was issued to the Belfast & Quebec Railway. This charter was allowed to lapse. On July 21st of this year, the first railroad in Canada, the Champlain & St. Lawrence Railway, from Laprairie to St. Johns, a distance of 14 miles, was opened. A charter was also issued to the Albion Mines Railway of Nova Scotia, Pictou. This line commenced operations in 1839.

Prior to 1837 there had been granted three separate charters to build a railroad from Toronto to Lake Simcoe but all lapsed for lack of capital.

1840-1850

In 1840 the European & North American Railway was advocated. Actual construction did not commence until 1853 and then stopped for lack of funds. This road eventually developed into the Intercolonial Railway.

In 1845 a charter was granted to the St. Lawrence & Atlantic Railway to build from Longeuil to the Vermont Line. The road was opened in 1851.

In 1846 the Montreal & Lachine Railway was chartered; road opened in Nov. 1847.

In 1847 a charter was granted to the Lanoraie & Industrie Railway, (Lanoraie to Joliette)—road was opened in 1850.

In 1845 there was a meeting held at Belleville advocating a railroad from Kingston to Toronto. With the opening of the Montreal & Lachine R. R., the latter sought power to extend to Kingston. About this time one Carmichael Smyth came into prominence by advocating the building of a line from Halifax to Puget Sound.

On Feb. 16, 1849, a meeting was held in the Donegana Hotel, Montreal, advocating a line from Quebec City to Windsor.

In 1848 two American lines came to the Canadian boundary—the Vermont Central and the Atlantic & St. Lawrence.

1850-1860

In 1859 the Sault Ste Marie Portage Railway, the second in Upper Canada, began to be worked by horse power. The Lanoraie & Industrie was opened on May 1, 1850.

On Aug. 26, 1851 the Champlain & St. Lawrence R. R. was opened to Rouses Point. This road subsequently became the Montreal & Champlain. On Oct. 15, 1851 the St. Lawrence & Atlantic was opened to Richmond and on July 16, 1853, it met the rails of the Atlantic & St. Lawrence at Island Pond, Vermont and thus was made the connection to Portland, Maine.

In Aug. 1852 the Montreal & New York Railway was opened from Caughnawaga to Moer's Junction meeting the Northern (New York) and other lines. This road incorporated the Montreal & Lachine with a ferry across the St. Lawrence at Lachine.

In 1853 a prospectus was issued which contemplated the amalgamation of the existing lines in Upper and Lower Canada. A charter for this enterprise had been issued in 1852 and it was named the Grand Trunk Railway of Canada. The consolidation was effected in 1856. The line reached Brockville, Nov. 19, 1855; Toronto in Oct. 1856 and in 1860 extended from Riviere du Loup to Fort Sarnia including the Victoria Bridge across the St. Lawrence at Montreal. It eventually absorbed the Great Western; Ontario, Simcoe & Huron; Montreal & Champlain; Montreal & New York and many other smaller roads. It was finally merged into the Canadian National Railways. Under the name of the Chicago & Grand Trunk its lines extended into Michigan and Illinois and these lines retain the name of the Grand Trunk Western Railway.

DATES OF CHARTERING AND OPENING OF THE CANADIAN ROADS

Albion Mines—tramway—1829, operated by horse power.
Champlain & St. Lawrence—chartered 1832; opened July 21, 1836—Laprairie to St. Johns, operated by steam.

Albion Mines—chartered in 1836; opened in 1839—Pictou, N. S. mines to New Glasgow, operated by steam.
Erie & Ontario—chartered 1835; opened in 1839—Queenston to Chippewa, operated by horse.
St. Lawrence & Atlantic—chartered in 1845; opened to St. Hillaire on May, 1847, operated by steam.
Montreal & Lachine—chartered in 1846; opened Nov. 1847, operated by steam.
Lanoraie & Industrie—chartered in 1847; opened May, 1850, Lanoraie to Joliette, operated by steam.
Portage Railway,—Sault Ste Marie—opened in 1850; from Lake Huron to Lake Superior—operated by horse.
Ontario, Simcoe & Huron—chartered in 1845; opened May 16, 1853, Toronto to Collingwood. Name changed to Northern R. R. in 1858.
Montreal & New York—opened in 1852, Caughnawaga to Moer's Jct.
Quebec & Richmond—chartered in 1851, opened in 1854.
Grand Trunk—chartered in 1852; opening reckoned from 1853.
Great Western—chartered in 1845; opened in 1854, Gore (Hamilton) to Toronto and Windsor.
Kingston & Toronto—chartered in 1851; opened to Toronto (G. T. R.) Oct. 1856.
Montreal & Kingston—chartered in 1851; opened in 1854 by G. T. R.
Buffalo, Brantford & Goderich, later Buffalo & Lake Huron—chartered in 1851.
Peterboro & Port Hope—chartered in 1853.
Cobourg & Peterboro—chartered in 1853.
Quebec & North Shore—proposed in 1853, became later the Quebec, Montreal, Ottawa & Occidental.
Carillon & Grenville—chartered in 1854.
Ottawa & Prescott—opened in 1854.
Montreal & By-Town—chartered in 1853, opened, 12½ miles in 1854.
Montreal & Northern—proposed in 1853, later became Northern Colonization R. R.
Montreal, Mississquoi & Vermont—from St. Lawrence & Atlantic line to Richford, Vt., opened in 1856.
Stanstead, Shefford & Champlain—St. Lambert to the lines at Stanstead, opened in 1856.
Grand Junction—chartered in 1852; opened by G. T. R. in 1856 from Belleville to Peterboro.
Megantic Jct.—proposed in 1852 from Megantic to Quebec & Richmond Ry.
Montreal & Champlain (formerly Champlain & St. Lawrence)—opened from St. Lambert to Rouses Point, N. Y., Aug. 26, 1851.

CONNECTING LINKS WITH AMERICAN LINES

The first connection between the Canadian and American lines was the connection made by the Montreal & Champlain together with the Northern (N. Y.) R. R. on Aug. 26, 1851, at Rouses Point, N. Y. This established a direct line from Montreal to eastern U. S. points.

In August, 1852, the Montreal & New York R. R. was linked with the U. S. lines at Moer's Jct.

On July 16, 1853, the St. Lawrence & Atlantic joined the Atlantic & St. Lawrence at Island Pond, Vt., thus linking Montreal with Portland, Maine and the U. S. seaboard.

With the linking of the Grand Trunk and the Great Western at Toronto in Oct. 1856, Montreal became joined with Chicago, Illinois.

Additional railroad openings were as follows:

Hamilton to London	Dec.	31,	1853—	G. W. R.
Hamilton to Suspension Bridge	Nov.	10,	1853—	G. W. R.
Konioka to Sarnia	Dec.	27,	1858—	G. W. R.
London to Windsor	Jan.	27,	1854—	G. W. R.
London to Port Stanley	Oct.	1,	1856—	G. W. R.
London to Stratford	Sep.	27,	1858—	G. W. R.
Montreal to Brockville	Nov.	19,	1855—	G. T. R.
Montreal to Point Levis	Nov.	27,	1854—	G. T. R.
Montreal to Richmond	Oct.	15,	1851—	St. L. & A.
Montreal to St. Hyacinthe	May		1850—	St. L. & A.
Montreal to Sherbrook	Aug.		1852—	St. L. & A.
Ottawa to Prescott	Dec.		1854—	O & P
Port Hope to Lindsay	Dec.	30,	1857—	G. T. R.
Quebec (Pt. Levis) to Montreal, via Richmond and Longueil ferry	June		1856—	Q. & R. and St. L. & A.
Quebec to St. Thomas	Dec.	23,	1855—	Q. & R.
Quebec to Riviere du Loup	July	2,	1860—	G. T. R.
Quebec to Halifax	July	3,	1876—	I. C. R.
St. Johns, P. Q. to Waterloo	June		1860—	
Port Colborne to Port Dalhousie	June	27,	1859—	
Peterboro to Millbrook	Aug.	18,	1858—	
Smith Falls to Perth	Feb.	17,	1859—	
Toronto to Barrie	Oct.	11,	1853—	O. S. & H.
Toronto to Bradford	June	13,	1853—	O. S. & H.
Toronto to Collingwood	June	2,	1855—	O. S. & H.
Toronto to Guelph	July		1856—	G. T. R.
Toronto to Hamilton	Dec.	3,	1855—	G. W. R.
Toronto to Sarnia	Nov.	21,	1859—	G. T. R.
Halifax, Truro & Windsor—opened	Dec.	15,	1858—	H. T. & W.
Moncton to Shediac	Aug.	20,	1857—	
St. John to Moncton	July	18,	1860—	
St. John to Bangor, Maine	Oct.	18,	1871—	
St. John to Fredericton			1870—	
St. John to Halifax			1873—	I. C. R.

LIST OF RAILROADS IN OPERATION IN THE CANADIAN PROVINCES IN 1860

Brockville & Ottawa	47½	miles
Berlin Branch	11	"
Buffalo & Lake Huron	157	"
Carillon & Grenville	12½	"
Cobourg & Peterboro	28	"
Erie & Ontario	17	"
Galt & Guelph	16	"
Grand Trunk	850	"
Great Western	331	"
Lanoraie & Industrie	12	"
London & Port Stanley	24	"
Montreal & Champlain	49	"
Montreal & New York	45	"
Northern (Ont. Sim. & H.)	96¾	"
Ottawa & Prescott	54	"
Port Dalhousie & Thornton	5	"
Port Hope, Lindsay & Beaver Lake	43	"
Rawdon & Industrie (not constructed)	16	"
Stanstead, Shefford & Champlain	55	"
Welland	25	"
Halifax, Truro & Windsor	93	"
Albion Mines	6	"
Belfast & Bangor (In Canada)	24	"
St. John & Moncton	118	"
Total	2136	"

RAILROADS COMPLETED, IN COURSE OF CONSTRUCTION, OR CHARTERED IN CANADA—1854

	Cons.	U. C.	Chart'd
Buffalo Brantford & Goderich	75	83	158
Brockville & Ottawa (Brockville-Arnprior)		75	75
Bytown & Pembroke			85
Champlain & St.Lawrence (Montreal-Rouses Pt.)	43		43
Erie & Ontario (Niagara-Chippewa)			20
Great Western (Niagara River-Windsor)	229		229
Grand Trunk (Trois Pistoles-Sarnia)	127	985	1112
Grand Junction (Belleville-Lake Huron)		150	150
London & Port Stanley		26	26
Megantic Jct.			24
Montreal & Bytown		120	120
Montreal & New York (Montreal-Moer's Corners)	52		52
*Montreal, Missisquoi & Vermont (A. & St. L.)			55
North Shore (Quebec-Montreal)		165	165
Ontario, Simcoe & Huron (Toronto-Lake Huron)	66	27	93
Peterboro & Port Hope			27
Peterboro & Cobourg	15	15	30
Prescott & Bytown		53	53
Lanoraie & Industrie	13		13
**Stanstead, Shefford & Chambly (St. Lambert-P. L.)		92	92
Toronto & Goderich		130	130
Toronto & Hamilton			45
Woodstock & Erie		75	75
	620	1996	2872

* From Atlantic & St. Lawrence Line to Richford, Vt.
** From St. Lambert to Province Line, Stanstead.
U. C.—Under Construction; P. L.—Province Line.

The foregoing list does not mention the Albion Mines Railroad at Pictou, N. S. opened in 1839.

The 1996 miles of railroad now under construction in Canada will, at the low average of £8,000 per mile cost £15,968,000 and the Victoria Bridge at Montreal will cost £1,500,000 sterling, in all £87,340,000. The whole of this sum will be expended in Canada in three years. The average fare in Canada for first class passengers is about 2 cents per mile, where the distance is over 150 miles; for shorter distances it is about 3 cents per mile.

In 1853 an attempt was made to interest capital in two proposed railways; one from Quebec to Montreal along the north shore of the St. Lawrence River and one from Montreal to St. Jerome and beyond. Some twenty years later both came to be realized; the former as the Quebec, Montreal, Ottawa & Occidental and the latter as the Northern Colonization, whose chief sponsor was the famous Father Labelle. It was the building of these two railways that gave rise to the Canadian Pacific. Their eventual consolidation with that of the South Eastern, under the name of the Atlantic & North West, was, in fact, the Canadian Pacific Railway.

Brief Notes on Famous Engines. I

By Arthur Curran

IT IS scarcely necessary to remind the members of our Society that the American, or 4-4-0 type, persisted as the favorite for half a century or more.

On one road, however—the old Lake Shore & Michigan Southern— its vogue came to an abrupt end more than a generation ago. The last minute substitution of the little 4-6-0, No. 564 on the final stretch, Erie to Buffalo, of the record run of 1895, opened the eyes of the officials to the possibilities of this type. Thereafter, the road did not purchase any more four-coupled engines for fast service.

For the time being, the Lake Shore was content with designs not much heavier than the redoubtable little ten-wheeler which had "hung up" an average of over 72 miles per hour, in spite of worn tires which reduced the driving wheel diameter from 68 to 66 inches. After using these conservative designs with success for several years, Mr. W. H. Marshall, Superintendent of Motive Power, developed a large and handsome 4-6-0, a number of which were built at the Brooks Locomotive Works. The first of them, road No. 602, appeared in October, 1899. With 20x28″ cylinders, 80″ drivers, 210 lbs. of steam pressure per square inch, and weight, without tender of 171,600 lbs., it was, at that time, "the heaviest express passenger locomotive ever built." It shared this distinction with subsequent engines of the same class. The earlier members of this general class had slide valves and the cab windows were rounded at the top. The later ones had piston valves and square cab windows. Otherwise, all were much alike.

When the "Twentieth Century Limited" was started in 1902, these engines handled it on the Lake Shore. The writer of these notes rode the east bound train only two months after it had been inaugurated and had not only the personal experience of seeing what fine work these engines could do but the opportunity to examine their handsome workmanship and pleasing appearance. It is a delightful memory to this day.

Through the kindness of the American Locomotive Company, I am enabled to reproduce the No. 602 and produce a list of the ten-wheel type of locomotives furnished the Lake Shore between 1890 and 1900.

1900

Road No.				
14	Brooks	17x24″	56″	105000
46	"	"	"	"
125	"	"	"	"
152	"	"	"	"
156	"	"	"	"
182	"	"	"	"
246–247	"	"	"	"
270	"	"	"	"
272	"	"	"	"
274–277	"	"	"	"
281–282	"	"	"	"
286	"	"	"	"
327	"	"	"	"
345	"	19½x30″	62″	158000

1891

22	Brooks	17x24"	56"	105000
495	"	"	"	"
554–560	"	"	"	"
153–154	"	17x24"	68"	115000
157	"	"	"	"
188	"	"	"	"
284	"	"	"	"
561–565	"	"	"	"
567–570	"	"	"	"
349	"	19½x30"	62"	158000

1892

571–596	Brooks	17x24"	56"	105000

1898

57	Brooks	17x24"	56"	105000
95	"	"	"	"
117	"	"	"	"
158	"	"	"	"
210	"	"	"	"
543	"	"	"	"
75	"	17x24"	62"	110000
96	"	"	"	"
122	"	"	"	"
566	"	"	"	"

1894

55	Brooks	17x24"	56"	105000
119	"	"	"	"
251	"	"	"	"

1895

13	Pittsburgh	17x24"	56"	108000
23	"	"	"	"
45	"	"	"	"
61	"	"	"	"
103	"	"	"	"
110	"	"	"	"
114	"	"	"	"
121	"	"	"	"
139–142	Schenectady	"	"	"
145	"	"	"	"
216	"	"	"	"
225	"	"	"	"
254	"	"	"	"
285	"	"	"	"
320	Brooks	"	"	"
326	"	"	"	"
328	"	"	"	"
333	"	"	"	"
290	"	"	"	"
301	"	"	"	"
323–324	"	"	"	"
332	"	"	"	"
334	"	"	"	"

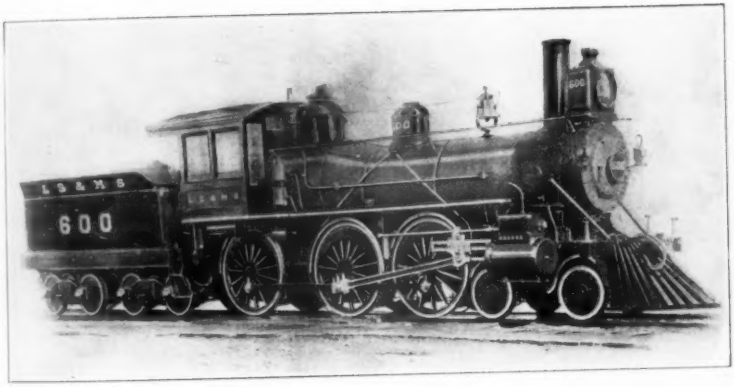


FIG. 1

L. S. & M. S. R. R. #600. Brooks, 1893.
Renumbered 543.

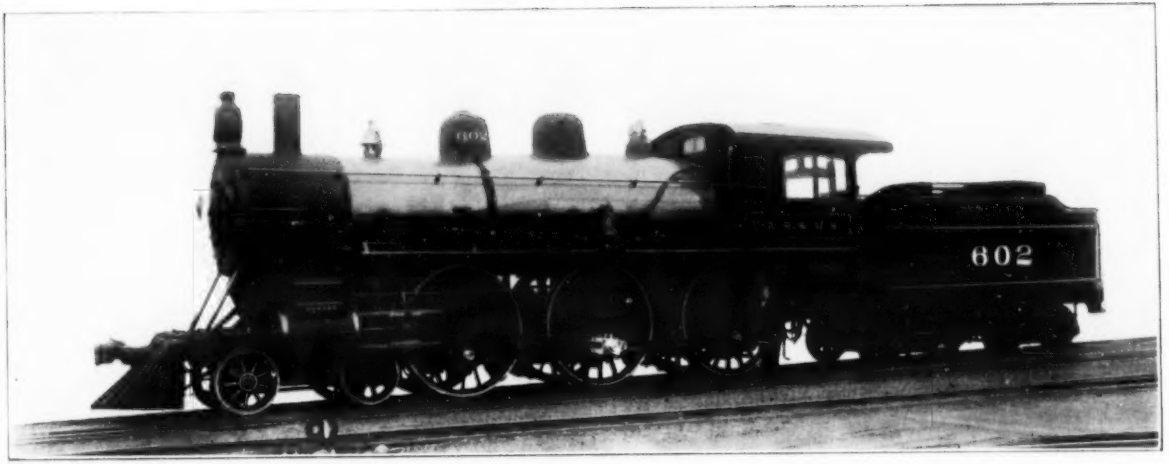


FIG. II

L. S. & M. S. R. R. 602. Brooks, 1899.

Courtesy A. L. Co.

		1896			
10	Schenectady		18x24″	68″	118000
20	"		"	"	"
90	"		"	"	"
107	"		"	"	"
116	"		"	"	"
128	"		"	"	"
146	"		"	"	"
148–149	"		"	"	"
544–546	Brooks		18x26″	69″	143300
		1897			
18	Brooks		17x24″	56″	108000
24	"		"	"	"
59	"		"	"	"
100	"		"	"	"
106	"		"	"	"
108–109	"		"	"	"
118	"		"	"	"
120	"		"	"	"
137	"		"	"	"
143	"		"	"	"
211	"		"	"	"
213	"		"	"	"
218	"		"	"	"
236	"		"	"	"
244–245	"		"	"	"
255	"		"	"	"
257–258	"		"	"	"
		1899			
331	Brooks		19½x30″	62″	158000
335–344	"		"	"	"
346–348	"		"	"	"
351	"		"	"	"
600–610	"		20x28″	80″	171600
		1900			
611–615	Brooks		20x28″	80″	172500

Canadian Railway Centenary of 1932

By Robert R. Brown

A VERY successful exhibition was held in the Chateau de Ramezay Museum, Montreal, by the Antiquarian and Numismatic Society to commemorate the 100th anniversary of the granting of the first railway charter in Canada, that of the Champlain and St. Lawrence Railroad on February 25th, 1832. Originally scheduled to open on February 22nd and close two weeks later, it was found necessary to continue the exhibition until March 15th, so great was the interest aroused.

The exhibition consisted of about 400 photographs of Canadian locomotives, ancient and modern, and other railway subjects; a large and varied collection of old reports, time-tables, tickets, letters and other documents and, in addition, there were some very interesting relics and models. There was one of the original brass name plates of the first locomotive in Canada, the "Dorchester"; all that remains of the engine. There was a piece of the original strap iron and wood rail of the Champlain and St. Lawrence Railroad, laid in 1835 and also a short piece of iron rail from the Albion Mine Railway, in Nova Scotia, laid in 1838. Among the models there was a scale model of the locomotive "Dorchester", together with a passenger car of the type used in 1836 and also a working model of the first locomotive on the St. Lawrence and Atlantic Railroad; it bears the name "St. Hyacinthe" but, undoubtedly, it is intended to represent either the "Princess" or the "Britannia", brought out from Scotland in 1847. The model of the "St. Hyacinthe" was made in 1850 by a fourteen year old boy named Rodier and the model of the "Dorchester" was made recently by your Canadian representative.

On February 25th, the actual anniversary, a special meeting of the Antiquarian Society was held in the Chateau de Ramezay and Mr. John Loye gave a very interesting lecture on the development of Canadian railways from the earliest suggestion, through the pioneer period down to the present day.

On March 15th the Exhibition was officially closed by a radio lecture by Mr. Loye and by an "At home" tendered to the exhibitors by the officers of the Antiquarian and Numismatic Society. There were present about twenty who are interested in Canadian railway history and in order that they might continue to keep in touch and meet occasionally, the Canadian Railroad Historical Association was formed. The work of this Association will be similar to that of the Railway and Locomotive Historical Society but of a more local character; the President and the Secretary are both members of the Railway and Locomotive Historical Society.

Golden Jubilee of the Canadian Pacific Railway

By JOHN LOYE

THE year of 1931 marked the completion of fifty years of corporate existence of the Canadian Pacific Railway, now one of the great business organizations in the world. The term, "C. P. R." is a term familiar all over the civilized globe, for the ramifications of this vast concern extend by land and by sea to every corner of the earth where men engage in trade ond commerce. Indeed, the C. P. R. has long since outgrown the sphere of a railroad proper and has assumed the character of a land and water transportation organization, in addition to maintaining a chain of large hotels, several pleasure resorts, a vast real estate business, a great subsidiary express company and many other enterprises that are quite outside that of actual railroading.

The Canadian Pacific ocean steamship lines on the Atlantic and Pacific are world renowned, and in addition the company has a fleet on the Great Lakes. For long the Canadian Pacific Railway stood predominant and unrivalled in its domain—Canada, but the colossal merger of 1923 which produced the Canadian National Railways, put another organization in the field; one which emulates the C. P. R. and which girds the Dominion with three thousand miles of steel from sea to sea and that operates ships and hotels and a business as wide and varied as that of the Canadian Pacific Railway.

THE FIRST CANADIAN PACIFIC PROPOSAL

The first serious suggestion for a transcontinental line of railway from Halifax to the Puget Sound appeared in the newspapers of Lower Canada in 1829, from correspondents whose names have not been left to us and from a civil engineer named McTaggart. Even at this early time they were not treated as fanciful and never ceased to interest the public mind in succeeding years. In 1849, one Carmichael Smyth published the plans of a scheme to the effect of linking the oceans by rail. He proposed to utilize convict labor in its construction in order to reduce the expense. He estimated its length at 4000 odd miles and the cost of £24,000 per mile. The Hon. Joseph Howe, speaking at a meeting in Halifax in 1851, stated he hoped to see the day when he would be able to travel from Halifax to the Pacific in six days. In the same year Allan McDougal proposed a railway from the head of Lake Superior to the Pacific Ocean, with a land grant sixty miles wide along the route to the company undertaking the construction. In 1858 the North West Transportation & Railway Company was incorporated, contemplating a system

of rail and water lines from Fort William to Vancouver Inlet. This company never emerged beyond the incorporation stage. Nevertheless, we find in these premature gestures the genesis of our present Canadian Pacific Railway, which realized, in 1885 the dream of 1829, Smyth's plan of 1849, Howe's wish and hope of 1851 and the abortive attempt of 1858. So much for the foresight of the men of by-gone days. Their ambition to realize was thwarted by the fact that fate had ordained them to have been born too soon.

THE CANADIAN PACIFIC REALIZED

The romance that invests the story of the passage of the Rocky Mountains by the railways of this continent is not to be met with in the history of any other land. North America produced a stage-setting, so to speak, more grand and inspiring, more romantic and thrilling, and, above all, more picturesque than ever to be found elsewhere on this planet.

The atmosphere of the great west of America; its vastness; the barrier of the rocky ranges and the lure of the ocean that lay beyond; the indomitable race of red men who disputed entry of the white man on their wild preserves; and the varied type and character of the men who crossed the river and the plain and pierced the mountains with their strands of steel. All the scenic, tragic, heroic and poetic elements of western American adventure enlivened and embellished the story of the building of the Canadian Pacific Railway. Men of the same mettle as those who first linked the oceans at Promontory Point, led the way through the virgin fastness or under the towering peaks of Stephen and Kanmore to a successful joining of the rails at Cragellachie on November 7, 1885.

The red man rose against the invasion of the befunneled iron monster but was subdued. The ocean was attained and the Canadian Pacific Railway took its place among the wonders of the world.

THE ORIGIN OF THE CANADIAN PACIFIC RAILWAY

The Canadian Pacific, like the Grand Trunk, had its origin in certain existing lines in Eastern Canada. As we have shown, the idea of a Canadian transcontinental railway had been in the public mind for long, even before the Confederation. The foundation of the great political structure of the federated provinces and territories of Canada, which were erected into a self-governing Dominion in 1867, rested upon a guarantee to the people of British Columbia that their isolated province should be linked to the East—by railroad.

Pursuant to this promise the Canadian Government prosecuted extensive surveys over the period from 1867 down to the end of the seventies. Beyond this no work of construction was done. In the meantime several extensive lines were built in the Province of Quebec, notably the Quebec, Montreal, Ottawa & Occidental, commonly called the North Shore Railroad, because it traversed the north shore of the St. Lawrence

River from Quebec to Montreal. It was heavily subsidized by the Provincial Government of Quebec and came into operation in 1874. In the same period the famous Father Labelle, a Roman Catholic priest, interested promoters in the building of the Northern Colonization Railroad; a line designed to open to colonization the regions to the north of Montreal. South of the St. Lawrence, the South Eastern Railway had been built from a point at Longueil, opposite Montreal, to the Vermont State line and east and west from its main trunk.

When the government at last set its hand to the enormous undertaking, it was with a view of consolidating the aforesaid lines to begin with and then to build westward. On this basis the Canadian Pacific Railway was incorporated in 1881, but not until the Government finally relinquished its interest to a private corporation.

FIRST PLANNED TO PASS THROUGH THE UNITED STATES

The new company drew heavily on the railway genius of American lines to assist in its achieving its vast design. The building of the road was done under the guidance of William Van Horne, a native of Illinois.

The first proposition was to lay the rails through central Ontario, Michigan, Illinois, Wisconsin, Minnesota, and there enter Manitoba. The astute Van Horne decided to strike through the wild land north of Lake Superior and keep the line within Canadian territory. On the other hand, he recommended passing through the State of Maine to reach the terminus at St. John, New Brunswick. This was done for the same practical reasons that prompted the British Government experts to advise the St. Lawrence & Atlantic R. R., in 1845, to aim for Portland, Maine instead of making the great detour around northern Maine and into Nova Scotia or New Brunswick in order to reach the Atlantic seaboard.

THE ACHIEVEMENT

On the 7th of November, 1885, the last spike was driven by Sir Donald Smith, later Lord Strathcona, at Cragellachie, British Columbia, 2553 miles from Montreal and 351 miles from Vancouver. The monumental undertaking stood at last achieved.

The celebration attending the driving of the last spike on the transcontinental lines had always been elaborate and expensive. The admitted cost of the ceremony on the Northern Pacific Railroad was $175,000.00 but it was probably more. In Canada they managed it differently!

"The last spike," said General Manager Van Horne, "will be just as good an iron one as there is between Montreal and Vancouver. Any one who wants to see it driven will have to pay full fare."

Under these terms the party that witnessed this historic event was limited to a few railroad officials and the workmen who finished the job. There were no speeches, no banquet, in fact nothing, and when Mr. Smith had delivered the last blow he threw down the maul and then the little party went fishing!

The outstanding figures in the organization of the Canadian Pacific Railway were,—James J. Hill, Donald A. Smith, George Stephen and William Van Horne. James J. Hill disassociated himself from the enterprise when Van Horne resolved to lay the rails north of Lake Superior. James J. Hill was later to become the "Empire Builder" in the American Northwest, but it was Hill who recommended Van Horne to Messrs. Stephen and Smith because of his, Van Horne's constructive and executive ability while connected with the Chicago, Milwaukee & St. Paul R. R. Van Horne in turn recommended Thomas Shaughnessey, of the same company, to the C. P. R. directorate.

George Stephen became the first President of the C. P. R., 1881-88 and when he retired he went to England to live. He was raised to the Peerage as Lord Mount Stephen. He was succeeded by Sir William Van Horne, upon whom knighthood had been conferred. He retired in 1897 to be succeeded by Sir Thomas Shaughnessey, who, in addition to receiving knighthood, was later raised to the Peerage as Baron Shaughnessey. Smith was knighted and eventually raised to the Peerage becoming Baron Strathcona and Mount Royal.

All have long since passed from the scene and the destinies of the giant organization are now in the hands of men who were children when its heralding whistle first rang through the ravines of the Rockies high.

The Canadian Northern Railway System

"Being an Extract from a Ms. entitled 'Canadian Railway Development from the Earliest Times' by Norman Thompson and Major J. H. Edgar, B. Sc., A. M. E. I. C."

UNLIKE the Canadian Pacific, the second transcontinental railway evolved from a series of detached fragments, silently and obscurely joined together until the time became ripe for the real objective to be announced; the building of the Canadian Northern Railway forms indeed, the most distinctive exhibition of Canadian expansion during the Twentieth Century. From the initial section on the western prairie there grew up steadily a system that ultimately stretched from Quebec and Ontario to the Pacific, with even a detached output by the Atlantic. Mackenzie and Mann's achievement may well be said to supply no inconsiderable part of the romance connected with Canadian railway transportation; the singular strategic skill displayed enabling the small beginnings to become developed into a transcontinental competitor before the full significance of what was transpiring could be thoroughly appreciated. A policy was pursued of acquiring by degrees, isolated charters, whose import appeared only after incorporation into the general system; somewhere there exists a diagram showing these charters, and it is said to present an aspect resembling an elaborated genealogical tree of the English Kings, including the Heptarchy.

During 1889 the Lake Manitoba Railway and Canal Company obtained power to build via Northwestern Manitoba to tidewater on Hudson Bay through territory originally selected for a Canadian Pacific line; the Provincial Government displaying a favorable attitude notwithstanding which the scheme failed to prosper. In 1896 this charter was acquired by Wm. Mackenzie and Donald Mann (who had formed a partnership in 1888); eighty-five miles were constructed the same year and the first commercial train ran on December 15th, from Gladstone to Dauphin, hauled by one of the two engines available. This formed the initial link in what was destined to develop into the Canadian Northern System, which it will therefore be noted, commenced as a North and South, rather than an East and West, line. Bearing in mind the interest since taken in the Hudson Bay Railway this fact is of particular significance, the Mackenzie-Mann plans having become diverted from the aspiration to reach Hudson Bay by inducements to strike West instead. Construction had progressed as far as Sifton by the end of 1896, and Winnipegosis was reached during the following year, this place being situated on the lake of the same name 124 miles from Gladstone, and now forming the terminus of a short branch.

The duties of a Superintendent on a pioneer railway of this description were both varied and exacting as exemplified by the following inci-

dent:—One bitterly cold night in February the train was en route from Dauphin to Gladstone and Portage la Prairie when, as Glenella was approached, the engine coughed herself into impotence, due to leaky tubes arising from a plethora of cold air, and with difficulty managed to haul her load into the siding. The temperature registered thirty degrees below zero, and the witching hour of midnight was recorded on one's watch. In close proximity there dwelt a recently arrived settler who was roused for the purpose of driving to Plumas thirteen and one half miles, whence it would be possible to despatch a telegram ordering a fresh engine.

Sitting in the bottom of a wagon-box set upon a home-made jumper sleigh, the Superintendent and settler drove off over the trail-less expanse of snow, with never a star to guide; the driver exhibiting signs of being almost as inert as the engine, but asserting, nevertheless, that he was acquainted with the way across the flat, hoary plain. After three-quarters of an hour had elapsed this individual admitted himself to be at fault, and the horses, left to themselves, brought the sleigh in half an hour to within sight of the gleaming red light shown by the helpless train. Bidding the farmer good morning, at 1.30 A. M., the Superintendent grasped a kerosene lamp and started tramping the sleepers to Plumas. Before a mile had been covered the lamp ceased to function, and on reaching the bridge over Jumping Deer River, the timbers were found coated with ice. It quickly become demonstrated that the foot cannot say to the hand, 'I have no need of thee', but at length the troublesome trestle was safely negotiated, and hope of gaining Plumas flickered up once more in a lonely human breast. The station being attained at 5.30 A. M., the Agent's slumbers were rudely disturbed, and assistance sought from Portage la Prairie; whence a Manitoba and North Western locomotive steamed to succour the derelict at Glenella, and then the Superintendent went to bed.

The first time table of the Lake Manitoba Railway and Canal Company saw the light on January 3rd, 1897, when one mixed train was operated in each direction twice a week, running rights being enjoyed between Portage la Prairie and Gladstone over the Manitoba and North Western. 'Service' formed the motto in those days, more stopping places being provided to the mile, in all probability, than on any other railway in the world; for along most of the route, settlement had only just commenced, passengers and way freight being handled to suit the pleasure of patrons. Six and one half hours were occupied by the mixed train in running from Portage la Prairie to Dauphin, the latter place deriving its name from a neighbouring lake, which had been so christened by an early French explorer. On the two nights of the week when the train was due there, a large crowd would be in waiting at the station to extend a welcome, sometimes conveying to immigrants a false impression of the importance attached to their arrival by the inhabitants. The Superintendent almost lived on the line, and frequently lent his aid in handling traffic, this being fundamentally a colonization railway.

Before long, the Mackenzie-Mann interests sought another field in

CANADIAN NORTHERN'S
EARLIEST TIME TABLE

The Lake Manitoba Railway and Canal Co.

TIME TABLE No. 1,

To take effect at 12 o'clock, Sunday, January 3rd, 1897,

For the use and guidance of Employees only.

Trains Going North. Read Down.				Trains Going South. Read Up.			
THIRD CLASS FREIGHT	SECOND CLASS MIXED	Miles from Gladstone Junction.	STATIONS.	Telegraph Calls.	Miles from Sifton.	SECOND CLASS MIXED	THIRD CLASS FREIGHT
No. 3. Fridays Only.	No. 1. Mondays and Fridays.					No. 2. Tuesdays and Saturdays.	No. 4. Fridays Only.
	L 14.35	0.0	Gladstone Junction		100.4	A 16.35	
			6.7				
	15.00	6.7	Orlivie		93.7	16.20	
			6.3				
	15.22	13.0	Plumas	MA	87.4	16.07	
			13.5				
	16.05	26.5	Glenella		73.9	15.27	
			8.1				
	16.25	34.6	Glenairn		65.8	15.00	
			13.0				
	17.05	47.6	Elliott		53.8	14.24	
			6.5				
	17.32	53.1	Laurier		48.3	13.57	
			6.4				
	17 54	62.5	Makinak		38.9	13.32	
			7.2				
	18.20	70.7	Ochre River		29.7	13.10	
			12.6				
L 19.45	A 19.00	83.3	Dauphin	DA	16.1	L 13.30	A 21.40
			6.5				
20.15		89.8	Valley River		9.6		21.10
			6.6				
A 20.40		100.4	Sifton		0.0		L 20.50

No. 4 will not leave Sifton unless No. 3 has arrived.

§ Water Tanks. † Meals.

NOTE.—Regular trains of this Company will run between Gladstone and Portage la Prairie on the following time, but the following schedule is only a memorandum, and is not to be used by employees.

Manitoba and North-Western Railway Time Tables only must be used for running time of these trains.

Mondays & Fridays leaves 19.30 Portage la Prairie 19.00 Arrive Tuesdays & Saturdays.
18.05 .... Macdonald 18.25
18.30 .... Westbourne .... 18.00.
16.00 .... Woodside 17.30
14.30 .... Clearwater 17.00

D. B. HANNA.
Superintendent.

From this line of 100 miles long has grown, in two decades, the Canadian Northern transcontinental system, embracing 9,000 miles of track and approximately the same mileage of telegraph wire. It will be observed that 20 years ago the railway did not even reach Winnipeg. It was several years later before this city became the headquarters of the railway. D. B. Hanna, who signs the time card, was at that time superintendent. He is now third vice-president.

The early history of the road becomes of much interest [illegible] inclusion of the Dominion government [illegible]

which to exercise their activities, and during 1898 they commenced construction of a line from Winnipeg for conveying wheat to Lake Superior for shipment; this being known as the Manitoba and South Eastern. Four hundred miles East of the growing prairie centre there already existed a stretch of track extending from Port Arthur towards Duluth, Minnesota, owned by the Port Arthur, Duluth and Western Railway. This was purchased and a start made in linking it with the Manitoba and South Eastern, such connection being required in accordance with the charter of the Ontario and Rainy River Railway. Whilst these initial steps were being taken in apparently haphazard fashion, property for terminal purposes was secured in Winnipeg, and plans were prepared for an advance through the Saskatchewan Valley to Edmonton, Alberta.

During the winter of 1898 the first section of the Manitoba and South Eastern Railway was opened from St. Boniface to Marchand, about forty-five miles distant; a typewritten time table being considered adequate for announcing the initial service. Commodities carried in early days consisted largely of cordwood from the swamps destined to keep Winnipeg warm, and ninety per cent of the traffic comprised trainloads of tamarack, poplar and jackpine. A commencement was made with two engines, fifty new freight cars, two second hand passenger cars and an uncertain number of flat cars for the cordwood, such as could be collected from the Canadian Pacific yard without asking permission. Sir William Whyte looking down from his office window on this proceeding used to frequently laugh over it, nevertheless the "Muskeg Limited" as the train became known, occupied its own peculiar place in Winnipeg transportation, and the nickname is worthy of preservation. The Title "Canadian Northern Railway" was adopted in 1901, and during the same year the Company received a valuable addition to its sphere of operation by acquisition of the Northern Pacific lines in Manitoba, previously taken over by the Provincial Government for re-disposal, the early history of which presents some remarkable incidents, which however is quite another story. This step gave the Canadian Northern the use of Water Street Station in Winnipeg, the connection from St. Boniface being put in service during that year also. Opening of the Union Station in 1911 resulted in the conversion of the older one to other uses, but the iron gates possess historic significance by still displaying the monogram "N. P. & M."

The East was also at this time embarking upon railway enterprises that failed to eventuate in accordance with the anticipations of their promoters, but which have, none the less, played a vital part in the system's subsequent economic development; the most remarkable of these local pioneering efforts being the Quebec and Lake St. John Railway, built for colonization purposes. The early financial troubles of this Company assume a romantic aspect when viewed through the kindly veil of time, but were grievous to be borne at the moment; for instance occasions arose when the train could not start from the station at Quebec until the General Manager had contrived to borrow sufficient money from the passengers wherewith to purchase coal for the engine.

The promoters of the Quebec and Lake St. John also commenced construction of the Great Northern Railway of Canada, whose primary object was to connect the City of Quebec with Montreal; Canadian Northern interests later obtained control of both lines, including sidings and other facilities at Quebec Harbour, adopting the title "Canadian Northern Quebec Railway" for the combination. When the Great Northern transfer took place in 1901, that Railway possessed a branch from Joliette (Quebec) to St. Catherine Street East Station in Montreal, the main line extending from Limoilou Junction in the suburbs of Quebec City, to Hawkesbury, Ontario, 225 miles, involving considerable bridge work in carrying the track over the Ottawa River to its South shore. After changing hands, construction continued to Ottawa, and a temporary wooden station was built on the outskirts, perched at the summit of an uncompromising hill. The old Moreau Street Station in Montreal (otherwise St. Catherine Street East) which is still in use, came into prominence during the war in connection with the entraining of troops for Valcartier Camp, the Canadian Northern route from Ottawa being also used for the same purpose.

In order to avoid the long detour by Joliette for traffic between Ottawa and Montreal, including use of the inconveniently-placed existing station in the latter city, an ambitious scheme was devised for penetrating to the business centre in connection with a new direct line. The topographical situation of Montreal is such that avenues of approach for railways are however, necessarily few, and those formerly available had long since been fully occupied by competitive companies, hence the drastic expedient was adopted of boring a tunnel more than three miles from end to end through the stubborn limestone of historic Mount Royal, and beneath several busy streets lined with massive buildings. The platforms at the station, which is designated the 'Tunnel Terminal', lie below street level, but open to the daylight, and are reached by descending from the circulating area opening onto Lagauchetiere Street. The tunnel and station were completed in October 1918; through trains being worked with electric locomotives from the terminus to Lazard, seven miles away, in addition to which numerous suburban trains are hauled by the same agency to Cartierville, one mile beyond, on what is called the 'Back River'. In some instances an electrically-driven train for Cartierville conveys at the rear a portion for the main line onto which a steam engine backs at Lazard. This notable tunnel was built to accommodate two tracks, and the line continues from the Northern Portal to effect a junction with the former Great Northern Railway at Hawkesbury; which in connection with improvements also made in the vicinity of Ottawa, resulted in providing a short route between the Central Station in the Capital City and the Tunnel Terminal in the commercial metropolis of Quebec Province.

While the foregoing events were transpiring in Quebec, the Canadian Northern was busily engaged in extending its operations further East. Nova Scotia desired a route which should follow the marvellously -indented South Shore from Halifax to Yarmouth; and the Halifax and South Western Railway was therefore built to meet the link between

Yarmouth and Barrington previously acquired by the same interests. The Northern portion constituted a development of an earlier undertaking—the Nova Scotia Central—the first sod having been turned at Lunenburg on August 10th, 1877. This ceremony having evidently been a rather elaborate one was brightened by the presence of the Town Band which played a selection after each of the eight addresses that were delivered; and the thoroughness of the speechmaking seems to have been equalled by that of the cheering. Cheers were given for the Queen, for the President of the United States, for the Ladies of Lunenburg, for those concerned in the enterprise and for the workmen gathered around. The Nova Scotia Central, opened during 1889, afforded a much-needed outlet to a most productive section of country; lumber moving over it in large quantities from the start. The dismal prognostications furnished by opponents, who had long indulged in ridicule, were emphatically discounted by actual results obtained after traffic had commenced. The Halifax and South Western main line was completed throughout in December, 1906, and the Caledonia Branch three years earlier. Inverness grew to its present status as a town through the development of coal measures on the west coast of Cape Breton Island, for in order to bring this fuel conveniently to a shipping port, sixty-one miles of track were built in 1901 to Port Hastings and Point Tupper on the Straits of Canso. New Brunswick also desired to benefit by Canadian Northern activities, and that Province was one of the only two (Prince Edward Island being the other) in which the System lacked a foothold within ten years of the founding of Dauphin in a Manitoban wheatfield.

Progress continued in the many projects connected with expansion of the System both east and west, in a marked manner; the charter of the Morden and North Western Railway being added during 1901, and early in the following year, the Canadian Northern link between Port Arthur and Winnipeg being completed and the first through train operated, so that by June the total mileage rose to 1248.

During 1904 expansion continued by the two methods, 441 miles being constructed, and 252 brought within the sphere of influence. Throughout the ensuing year the utmost vigour was employed in pushing the realization of the Company's plans, the policy being to render each section, as built, self-supporting. On November 24th, amid much ceremony and local rejoicing, the railway entered Edmonton, the present Capital of the Province of Alberta, and for long an important trading centre; and the completion of lines to that City and Prince Albert marked a momentous advance in the forward march of the Canadian Northern System.

An important link is afforded by the line connecting Regina, Capital of Saskatchewan, with Saskatoon, another hub of railway activity, and Prince Albert, as the greater portion forms an additional route for through traffic between Winnipeg and Edmonton. Prince Albert is the largest city in the Prairie Provinces north of Edmonton, and forms the northern limit of railway travel in that part of Canada. The Railway under notice, formerly known by the cumbersome title of the 'Qu'Appelle, Long Lake and Saskatchewan', was originally owned by English

capitalists, being operated and equipped by the Canadian Pacific under a lease, on the termination of which it came into the Canadian Northern fold. This is the most notable case of a railway being transferred from one competitor to another.

While these events were transpiring in the West, construction was proceeding in Ontario, and the formal opening of the trunk line from Toronto to Parry Sound, an important point on Georgian Bay en route to Sudbury and Port Arthur, took place in 1906, this line being destined to eventually connect Toronto with Winnipeg and Vancouver. On July 3rd, 1908, traffic was inaugurated between Toronto and Sudbury, the latter being an important mining centre in Northern Ontario.

The previous year, however, witnessed a severe diminution in the rate of progress recorded, due to unprecedented weather conditions, and their effects. The winter of 1906-7 is regarded as having proved the most rigorous of any experienced during a long period in the history of the Prairie Provinces, a train being reported as leaving Winnipeg on March 28th, and failing to arrive at Edmonton until April 14th. Under such circumstances numerous complaints accrued, and conditions were unfavourable to the building of extensions, which policy was therefore temporarily discontinued.

Construction from Saskatoon towards Calgary however, started in 1907, and by the end of 1909, track had been laid to Kindersley, Saskatchewan, a distance of 125 miles, and by 1912 to Hanna, Alberta; an additional 137 miles. During this interval the district filled up with great rapidity, and the newly-laid line became taxed to capacity in order to cope with the carriage of settlers' effects, merchandise and coal, and in hauling out the grain. Connection followed to Drumheller in 1913, and thereafter to Calgary, which was reached in 1913. The Red Deer River proved a formidable obstacle to negotiate, but the coal workings at that point commenced by the pioneer 'Sam Drumheller' at once attained prominence, and eventually the number of producing mines amounted to twenty-eight scattered about the region.

In 1918 it was decided to build twenty miles of second track between Munson Junction, where the lines from Saskatoon and Edmonton to Calgary converge, and Wayne; to relay the whole line with eighty-five pound steel rails; to replace the wooden trestles with concrete structures and solid embankments; to extend sidings and to provide additional passing tracks; arrangements being also made to reduce the number of river crossings by diverting either the railway or the river in the Rosebud Valley. The original route entailed the erection of no less than sixty-seven woodpile bridges; and it was planned to abolish many of these, leaving but twenty-nine permanent crossings executed in steel and concrete, in their place.

Reverting to the mountains, the railway builder found a worthy foe when he essayed to level a path for his rails in British Columbia, bridges across mountain streams or rocky gorges, tunnels through shoulders of rock, benches cut out of the solid, embankments long and heavy, were the rule and not the exception. The civil engineer had his hands full, and was provided with a succession of problems to his heart's content.

Almost any mile of the construction would form a gripping story in itself, and the ingenuity of both engineer and contractor was continually pressed to the limit.

It was said that certain parts of the line between Kamloops and the Fraser River that did not slip into the water in the spring would get there in the fall. For miles, access to the work along the Fraser Canyon was effected by means of steel cables slung across the river, from which were suspended buckets or slings travelling beneath them; and in these all the men and materials employed were transported. In the initial stages of mountain building, engineering parties might have been observed crawling on the faces of the cliffs, prevented from falling by ropes hung from above. Having determined the location of the roadbed, the next step consisted in notching out a foot trail and so to provide the first means for directing a real attack on the rock to be moved.

The actual blasting in large or small quantities is a matter of only a second or two at most; aside from the removal of the broken fragments, the laborious portion of the operation consists in driving the holes into which are to be rammed the explosive charges. These may be only small drill holes, a few feet in depth, and a little more than an inch in diameter; or a set of burrows forming in reality a small tunnel with a series of pockets which will be loaded with the necessary charges of dynamite or black powder, or both; to lift or break out the rock at the point of least resistance. Often tens of thousands of cubic yards are moved or disintegrated by one shot, numbering several tons of explosives.

Ordinarily to achieve a foot or two a day on each end of a rock tunnel was regarded as constituting good progress. En route to Vancouver there exist thirty-nine tunnels, all but four having been pierced through solid rock varying from less than two hundred feet to over half a mile in length. Mountain streams come into flood with melting snows and reach raging proportions if rains should be co-incident, so that to successfully place the footings for a bridge in these rivers is a matter of choosing the appropriate season; frequently a whim of nature catches part of the work unfinished, however, and wipes it out. The inference should not be drawn from the foregoing remarks that the mountain work on the Canadian Northern was confined solely to British Columbia, as the Boundary between that Province and Alberta runs along the summit of the Rockies, and many engineering difficulties were encountered in climbing from the prairies through the foothills to the Continental Divide. The last spike was driven at Basque, B. C., in 1915; but as the Great War was then raging this noteworthy event secured little public notice.

The section from Fort William to Winnipeg became finally linked on January 1st, 1902, when the last spike was driven by Mackenzie and Mann in the shadow of a splendid white pine near Fort Frances, the spot being called Hanna's Point, in recognition of the General Manager, who was a passenger on the first through train. Port Arthur having been left at 10.00 A. M. on December 31st, on arrival at Fort Frances it was found that eighteen feet of rail still remained unlaid. After this

hiatus had been dealt with and the ceremony performed, the train proceeded, reaching Winnipeg thirty-six hours after leaving Port Arthur. It consisted of three cars, one named "Sea Falls", a parlour car and the car 'Keewatin' supplied for the occasion by the Canadian Pacific Railway. On June 30th, 1908, the mileage owned, leased or operated by the Company totalled no less than 2894; and at the close of the year this figure had risen to 3,100; or including lines located in Eastern Canada, the respectable sum of 5,400 miles. The year 1909 witnessed continued expansion, 482 miles located in five different provinces being added, besides 398 miles levelled in readiness for tracklaying. During the first eighteen years an average of nine furlongs per day was achieved.

In less than twenty years the Canadian Northern developed from a small pioneer railway operated by a staff numbering fourteen, including all departments, into a system which served centres of one thousand population and over, representing ninety-seven per cent of the inhabitants in Manitoba and Saskatchewan; and ninety per cent of those in Alberta. Between six and seven hundred towns and shipping points came onto the map directly through this Company's activities.

During the spring of 1883 the first steamer load of passengers bound for Winnipeg immediately from an Ontario port arrived at Port Arthur, among them being a young engineer named McLeod, who had served as chairman on the Credit Valley line in Ontario, and was on his way to the Lake Superior district of the Canadian Pacific. He filled a wonderful destiny in becoming Chief Engineer and General Manager of the Canadian Northern, and in building more railway in the prairie country than any other man.

Some day perchance, fitting tribute will be paid the railway engineers who have wrought so magnificently in transforming the face of Canada. M. H. McLeod commenced duty as Chief Engineer of the Canadian Northern in the spring of 1900, at which time the mileage was but six hundred. The quality of the railway pathfinder is essentially the same whether he walks alone, in the depth of winter on Saskatchewan ice, looking for a place to build a steel bridge a thousand feet long; or whether he is wandering round Toronto's wharves littered with shipping ware-houses, planning improved approaches to a new station. He is in a class of his own, but also belongs to a great company of engineers to whom ungrudging admiration is richly due, and too seldom accorded. McLeod was a born, incurable, unconquerable pathfinder; he would set out to discover country well-adapted for settlement and for a settlers' railway, and not only find what he wanted, but at the same time, would devise some improvement in the location determined upon by his staff for other lines, that saved thousands of dollars in construction. Those serving under the Chief also exhibited similar qualities, and in this connection an amusing episode is related by one of the Profession. While in charge of some surveys on the prairie and explorations involved thereby, he was called upon to spend the working hours of three or four months on horseback. Upon one occasion a friend offered to sell him a horse and he enquired: "Does he buck?" "Well", replied the owner, "This horse has never bucked with me". The engineer purchased the animal and during the first day in the saddle was thrown violently from

his mount. Meeting the vendor a few days later he remarked: "I thought you stated that this horse would not buck?" "No", answered the other, "I did not say that. I said that the horse had never bucked with me, which is perfectly true, as I was never on his back."

Nothing in North American transportation history quite parallels the career of the Canadian Northern during its twenty-six years of independent operation. Mackenzie and Mann were indeed unique among the railway builders of the Continent. They performed a feat which no United States combination ever achieved. Their enterprise was more original than anything carried through by James Hill. Their pioneer railway induced settlement a hundred miles north of the line beyond which implement manufacturers had refrained from extending credit. They went where railway obligation was afraid to venture; they possessed the pioneering, constructive passion which made of them Great Canadians; they were so saturated with this spirit that it was more difficult to keep them from getting in advance of traffic than to fulfil the promises given. The whole project was marked by the simplicity shown by all works of genius, although the most bewildering and intricate corporate financing that Canada had ever known took place. The planning was constructive, the strategy admirable in the selection of routes during the early years, and the service rendered the prairie country invaluable. William Mackenzie, Master planner and financial wizard; Donald Mann with his forcefulness; and Zebulun Lash, subtlest framer of legal clauses and monetary expedients in the annals of Canada, formed indeed a trio worthy of each other and of the mighty task in hand.

The adventurous career of the Canadian Northern Railway System as a separate entity was brought to a close in 1918, when it passed under control of the Dominion Government. On July 12th, 1920, an Order-in-Council was published appointing the Board of Directors who were administering the former Canadian Northern Railway to be managers of the Grand Trunk Pacific also; immediately afterwards the official staffs of the two lines became amalgamated and reorganized, the departmental officers and their employees being included in the consolidation.